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Organization of the
United Nations



International Plant Protection Convention
Protecting the world's plant resources from pests

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IPPC PROCEDURE MANUAL FOR STANDARD SETTING

Produced by the Secretariat of the
International Plant Protection Convention (IPPC)

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International Plant Protection Convention

2016-2017 Procedure Manual

Standard Setting

Produced by the Secretariat of the
International Plant Protection Convention
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List of abbreviations

ALPP	Area of low pest prevalence	PFA	Pest free area
APPPC	Asia and Pacific Plant Protection Commission	PPPO	Pacific Plant Protection Organization
CPPC	Caribbean Plant Protection Commission ¹	PRA	pest risk analysis
COSAVE	Comité Regional de Sanidad Vegetal para el Cono Sur	PT	Phytosanitary treatment
CAN	Comunidad Andina	ROP	Rules of Procedure
CBD	Convention on Biological Diversity	RPPO	regional plant protection organization
CDC	Capacity Development Committee	RSPM	Regional Standard for Phytosanitary Measures
CEPM	Committee of Experts on Phytosanitary Measures	SBDS	Subsidiary Body on Dispute Settlement
CPM	Commission on Phytosanitary Measures	SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
DP	Diagnostic protocol	SC	Standards Committee
EDG	Expert drafting group	SC-7	Standards Committee Working Group of seven members
ELISA	Enzyme Linked ImmunoSorbent Assay	SPG	Strategic Planning Group (formerly called SPTA)
EPPO	European and Mediterranean Plant Protection Organization	SPS	Sanitary and Phytosanitary
EWG	Expert working group	SPTA	Strategic Planning and Technical Assistance (now called SPG)
FAO	Food and Agriculture Organization of the United Nations	SSP	Standard setting process
GMO	Genetically Modified Organism	TCP	Technical Cooperation Programme
GRO	General Rules of the Organization	TOR	Terms of Reference
GWG	Glossary Working Group	TP	technical panel
IAEA	International Atomic Energy Agency	TPDP	Technical Panel on Diagnostic Protocols
IAPSC	Inter-African Phytosanitary Council	TPFF	Technical Panel on Pest Free Areas and Systems Approaches for Fruit Flies
ICPM	Interim Commission on Phytosanitary Measures	TPFQ	Technical Panel on Forest Quarantine
IPP	International Phytosanitary Portal	TPG	Technical Panel for the Glossary
IPPC	International Plant Protection Convention	TPPT	Technical Panel on Phytosanitary Treatment
ISC	Interim Standards Committee		
ISPM	International Standard for Phytosanitary Measures		
LMO	Living Modified Organism		
LOT	List of topics for IPPC standards		
NAPPO	North American Plant Protection Organization		
NEPPO	Near East Plant Protection Organization		
NPPO	national plant protection organization		
NRT	New Revised Text (of the IPPC)		
OCS	Online Comment System		
OIE	World Organization for Animal Health (Office International des Épizooties)		
OIRSA	Organismo Internacional Regional de Sanidad Agropecuaria		
PCE	Phytosanitary Capacity Evaluation		

¹ CPM-10 (2015) abolished the CPPC.

INTRODUCTION

The purpose of this manual is to provide, in a convenient form, the decisions, procedures and practices of the Commission on Phytosanitary Measures (CPM), its subsidiary bodies, and other relevant drafting groups of relevance to standard setting.

This edition of the manual includes decisions and procedures through the end of September 2015. The decisions and procedures described herein are subject to future amendment and the manual will be updated annually in September.

For the purpose of clarity, all official text is in the black font with details of their source, including resolutions of the FAO Conference, decisions of the Interim Commission on Phytosanitary Measures (ICPM), the CPM, the CPM Bureau, Standards Committee (SC) and technical panels (TPs).

Black text may have been edited for consistency in terminology and therefore not necessarily be identical to the original text as adopted or approved.

Text in blue font is for explanatory purposes only and should not be considered an official decision.

Many references to annexes and internal sections in this document contain hyperlinks (underlined) to help navigation in the electronic version of this document. The sections on the Technical Panel on Diagnostic Protocols (TPDP), the Technical Panel on Phytosanitary Treatments (TPPT) and the Convention text contain additional separate tables of contents.

Footnote cues are in red text to locate them quickly in the paragraphs.

1. STANDARD SETTING

Medium term goal 1: A robust international standard setting and implementation programme.

In the 1990s, the International Plant Protection Convention (IPPC – [ANNEX 9](#)) began work on formulating International Standards for Phytosanitary Measures (ISPMs)². The ISPMs are intended to harmonize phytosanitary measures applied in international trade.

In November 1993, the Conference of the FAO, at its twenty-seventh session, approved the first ISPM. Since then, standards covering a wide range of topics have been adopted and others are in the draft or consultation phases of the standard-setting process. Existing standards are scheduled for periodic review and are then revised as necessary. Adopted ISPMs are listed in [ANNEX 1](#) to this manual.

2. IPPC STANDARD SETTING PROCEDURE

The current IPPC Standard setting procedure forms Annex III of the Rules of Procedure of the Commission in 2012³ (see [ANNEX 8](#) for the CPM RoPs; Annex III is reported fully in Section 2.1 and hence not included in Annex 8 of this document).

2.1 Stages of the Standard setting process

The stages below are described as adopted by the CPM.⁴

The process for the development of ISPMs is divided into four stages:

- Stage 1: Developing the List of topics for IPPC standards
- Stage 2: Drafting
- Stage 3: Consultation and review
- Stage 4: Adoption and publication

The Procedures and *Criteria for justification and prioritization of proposed topics* for inclusion in the *List of topics for IPPC standards* were adopted by ICPM-4 in 2002 and revised by CPM-3 in 2008 and by CPM-10 (2015).⁵

² ISPM: An international standard adopted by the Conference of the FAO, the ICPM or CPM, established under the IPPC (ISPM 5 (*Glossary of phytosanitary terms*)).

³ ICPM-2 (1999) adopted the Standard setting procedure as Annex I to the Rules of Procedure for the Interim Commission; then included when the Rules of procedure of the Commission were adopted by CPM-1 (2006); revision adopted as Annex I of the Rules of Procedure of the Commission by the CPM-3 (2008). CPM-7 (2012) noted the Standard setting procedure forms Annex I of the Rules of procedures of the Commission, but for logic sequencing the IPPC Secretariat changed the numbering to Annex III (Appendix 8) see paragraph 67 and Appendixes 4 and 5. In Appendix 8, Annex III has been taken out as it is fully reproduced in the body text of this document.

⁴ The ICPM-4 (2002) adopted the procedures for identifying topics and priorities for standards. CPM-3 (2008) adopted (Paragraph 89.3 and Appendix 8) modified procedures and criteria for identifying topics for inclusion in the IPPC standard setting work programme were adopted, following consideration of outcomes of a Focus Group. CPM-7 (2012) adopted the revised IPPC Standard setting procedure. CPM-11 (2016) adopted adjustments to the IPPC Standard setting procedure.

⁵ CPM-3 (2008), Appendix 8 and revised by CPM-10 (2015), paragraph 74 and Appendix 6.

Stage 1: Developing the *List of topics for IPPC standards*

Step 1: Call for topics

The IPPC Secretariat makes a call for topics⁶ every two years. Contracting parties (CPs) and regional plant protection organizations (RPPOs) submit detailed proposals for new topics or for the revision of existing ISPMs to the IPPC Secretariat. Submissions should be accompanied with a draft specification (except for Diagnostic protocols (DPs)), a literature review and justification that the proposed topic meets the CPM-approved criteria for topics (available in the IPPC Procedure manual for standard setting). To indicate a global need for the proposed topic, submitters are encouraged to gain support from CPs and RPPOs in other regions.

A separate call for submissions for Phytosanitary treatments (PTs) is made.

The Standards Committee (SC), taking into account the IPPC Strategic Framework (see [ANNEX 2](#)) and the [Criteria for justification and prioritization of proposed topics](#), reviews the submissions. The SC reviews the *List of topics for IPPC standards* (including subjects), adding topics and giving each topic a recommended priority. This list is recommended to the CPM.

The CPM reviews, changes and adopts the *List of topics for IPPC standards*, including assigning a priority for each topic.

A revised *List of topics for IPPC standards* is made available.

Step 2: Annual review of the *List of topics for IPPC standards*

Annually the SC reviews the *List of topics for IPPC standards* and recommends changes (including deletions, or changes in priority) to the CPM. In exceptional circumstances, in response to a specific need, the SC may recommend an addition to the *List of topics for IPPC standards*.

The CPM reviews the *List of topics for IPPC standards* recommended by the SC. The CPM changes and adopts the *List of topics for IPPC standards*, including assigning a priority for each topic. A revised *List of topics for IPPC standards* is made available.

In any year, when a situation arises in which an ISPM or a revision to an ISPM is required urgently, the CPM may add such a topic into the *List of topics for IPPC standards*.

⁶This is a call for "technical area", "topic", "diagnostic protocol (DP)", see the *Hierarchy of terms for standards* in the IPPC Procedure manual for standard setting.

Stage 2: Drafting

Step 3: Development of a specification

The SC should be encouraged to assign a lead steward and assistant(s) for each topic. These assistants could be from outside the SC, such as potential SC replacement members, former SC members, technical panel (TP) members or expert working group members.

The SC reviews the draft specification. The SC should endeavour to approve draft specifications for consultation at the SC meeting following the CPM session when new topics have been added to the *List of topics for IPPC standards*.

Once the SC approves the draft specification for consultation, the IPPC Secretariat makes it publicly available. The IPPC Secretariat solicits comments through the IPPC Online Comment System (OCS) from CPs, RPPOs, relevant international organizations, and other entities as decided by the SC. The length of the consultation for draft specifications is 60 days. The IPPC contact point or information point submits comments to the IPPC Secretariat using the OCS⁷.

The IPPC Secretariat compiles the comments received, makes them publicly available and submits them to the steward and the SC for consideration. The specification is revised and approved by the SC, and made publicly available.

Step 4: Preparation of a draft ISPM⁸

An expert drafting group (EDG) (i.e. expert working group (EWG) or TP) drafts or revises the draft ISPM in accordance with the relevant specification. The SC may request the IPPC Secretariat to solicit comments from scientists around the world to ensure the scientific quality of draft DPs. The resulting draft ISPM is recommended to the SC.

The SC or the SC working group established by the SC (SC-7) reviews the draft ISPM at a meeting (for a DP or PT, the SC reviews it electronically) and decides whether to approve it for consultation, to return it to the steward or an EDG or to put it on hold. When the SC-7 meets, comments from any SC members should be taken into account.

⁷ The IPPC Secretariat is using the IPPC Online Comment System (OCS) for submitting comments on draft specifications and draft ISPMs for consultation periods. The OCS is available at: <https://ocs-new.ippc.int>.

⁸ This procedure refers to “draft ISPMs” and “standard” to simplify wording, but also applies to any part of an ISPM, including annexes, appendixes or supplements.

Stage 3: Consultation and review

Draft ISPMs are submitted to two consultation periods except for draft DPs which are submitted to one consultation period unless decided otherwise by the SC.

Step 5: First consultation

Once the SC approves the draft ISPM for the first consultation, the IPPC Secretariat makes it publicly available. The IPPC Secretariat solicits comments through the OCS from CPs, RPPOs, relevant international organizations, national plant protection services of non-CPs, and other entities as decided by the SC. The length of the first consultation for draft ISPMs is 90 days. The IPPC contact point or information point submits comments to the IPPC Secretariat using the OCS. The IPPC Secretariat compiles the comments received, makes them publicly available and submits them to the steward for consideration.

The steward reviews the comments, prepares responses to the comments, revises the draft ISPM and submits them to the IPPC Secretariat⁹. These are made available to the SC. Taking the comments into account, the SC-7 or TP (for draft DPs or draft PTs) revises the draft ISPM and recommends it to the SC.

For draft ISPMs other than draft DPs and draft PTs, responses to the major issues raised in the comments are recorded in the report of the SC-7 meeting. Once the SC-7 recommends the draft ISPM to the SC, the IPPC Secretariat makes it publicly available.

For draft PTs or draft DPs, once the SC has approved them and the responses to comments, the drafts and responses to comments are made publicly available. A summary of the major issues discussed by the SC for the draft DP or draft PT is recorded in the report of the following SC meeting.

Alternatively to approving the draft ISPM, the SC may for example return it to the steward or an EDG, submit it for another round of consultation or put it on hold.

Step 6: Second consultation

Once the SC or SC-7 approves the draft ISPM for the second consultation, the IPPC Secretariat solicits comments through the OCS from CPs, RPPOs, relevant international organizations, national plant protection services of non-CPs, and other entities as decided by the SC. The length of the second consultation is 90 days. The IPPC contact point or information point submits the comments to the IPPC Secretariat using the OCS. The IPPC Secretariat compiles the comments received, makes them publicly available and submits them to the steward for consideration.

The steward reviews the comments, prepares responses to the comments, revises the draft ISPM and submits the revised draft ISPM to the IPPC Secretariat. These are made available to the SC and the revised draft ISPM, other than draft PTs, is made available to CPs and RPPOs.

The SC reviews the comments, the steward's responses to the comments and the revised draft ISPM. For draft ISPMs other than draft PTs, the SC provides a summary of the major issues discussed by the SC. These summaries are recorded in the report of the SC meeting.

For draft PTs, once the SC has approved them and the responses to comments, the drafts and responses to comments are made publicly available. A summary of the major issues discussed by the SC for the draft PT is recorded in the report of the following SC meeting.

Alternatively to recommending the draft ISPM to the CPM, the SC may for example return it to the steward or an EDG, submit it for another round of consultation, or put it on hold.

⁹ See [Responsibilities, duties and tasks of the lead steward](#) on how to respond to comments.

Stage 4: Adoption and publication

Step 7: Adoption

- For draft ISPMs other than draft DPs:

Following recommendation by the SC, the draft ISPM is included on the agenda of the CPM session. The IPPC Secretariat should make the draft ISPM presented to the CPM for adoption available in the languages of the Organization as soon as possible and at least six weeks before the opening of the CPM session.

If all CPs support the adoption of the draft ISPM, the CPM should adopt the ISPM without discussion.

If a CP does not support the adoption of the draft ISPM, the CP may submit an objection¹⁰. An objection must be accompanied by technical justification and suggestions for improvement of the draft ISPM which are likely to be acceptable to other CPs and be submitted to the IPPC Secretariat no later than 3 weeks before the CPM session. Concerned CPs should make every effort to seek agreement before the CPM session. The objection will be added to the CPM agenda and the CPM will decide on a way forward.

When the need for a minor technical update to an adopted ISPM is identified by a TP or the SC, the SC can recommend the update for adoption by the CPM. The IPPC Secretariat should make the update to the adopted ISPM available in the languages of the organization as soon as possible and at least six weeks prior to the opening of the CPM meeting. Minor technical updates to adopted ISPMs presented to the CPM are subject to the objection process as described above.

- For draft DPs:

The CPM has delegated its authority to the SC to adopt DPs on its behalf. Once the SC approves the DP, the IPPC Secretariat makes it available on defined dates twice a year dates¹¹ and CPs are notified¹². CPs have 45 days to review the approved DP and submit an objection, if any, along with the technical justification and suggestions for improvement of the approved DP. If no objection is received, the DP is considered adopted. DPs adopted through this process are noted by the CPM and attached to the report of the CPM meeting. If a CP has an objection, the draft DP should be returned to the SC.

When a technical revision¹³ is required for an adopted DP, the SC can adopt the updates to adopted DPs via electronic means. The revised DPs shall be made publicly available as soon as the SC adopts them. DPs revised through this process are noted by the CPM and attached to the report of the CPM meeting.

¹⁰ An objection should be a technically supported objection to the adoption of the draft standard in its current form and sent through the official IPPC contact point (Refer to the *Criteria to help determine whether a formal objection is technically justified* as approved by CPM-8 (2013), recorded in the IPPC Procedure manual for standard setting).

¹¹ 1 July and 15 December as decided by SC 2013-05.

¹² For translation of DPs, contracting parties would follow the mechanism for requesting the translation for DPs into FAO languages posted on the IPP (<https://www.ippc.int/en/core-activities/standards-setting/draft-ispm/notification-period-dps/mechanism-translate-diagnostic-protocols-languages/>).

¹³ A technical revision for DPs has been defined by the SC and is recorded in the IPPC Procedure manual for standard setting.

Step 8: Publication¹⁴

The adopted ISPM is made publicly available.

CPs and RPPOs may form a Language Review Group (LRG) and, following the CPM-agreed LRG process¹⁵, may propose modifications to translations of adopted ISPMs.

3. THE IPPC STANDARD SETTING PROCESS EXPLAINED

The following figures and flowcharts, developed by the IPPC Secretariat, intend to explain visually the process of setting standards.

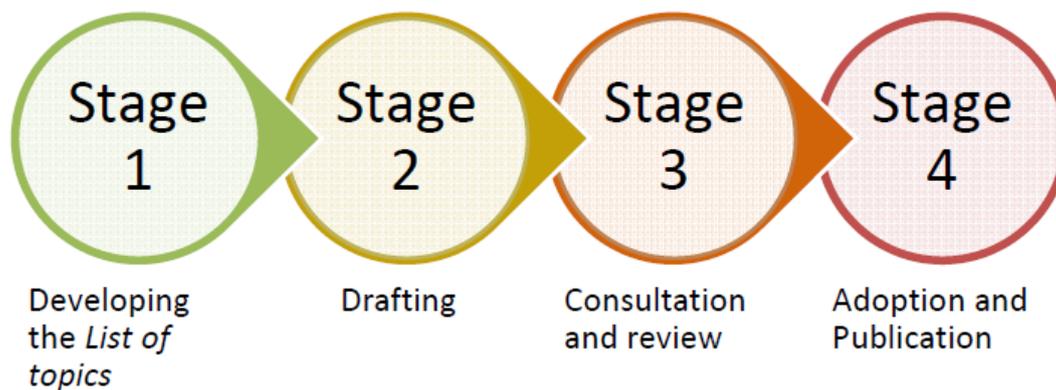


Figure 1: The IPPC Standard setting process

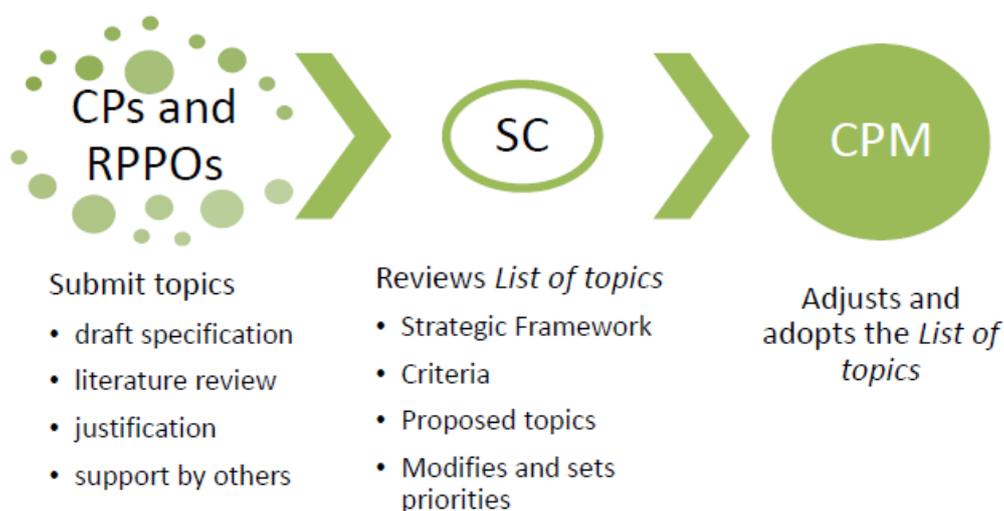


Figure 2: Stage 1, step 1 of the IPPC Standard setting process “call for topics”.

¹⁴ CPM-3 (2008), Appendix 10.

¹⁵ The LRG process is available here: <https://www.ippc.int/en/core-activities/governance/standards-setting/ispms/language-review-groups/>.

3.1 Topics

Submission of topics

Detailed proposals for new topics or for the revision of existing ISPMs are submitted to the IPPC Secretariat (IPPC@fao.org) within the deadlines established by the IPPC Secretariat that year (normally during August). The submission form for topics for IPPC standards is available on the IPP (<https://www.ippc.int/en/publications/1088/>) (see ANNEX 3). Submissions should address the *Criteria for justification and prioritization of the proposed topic* (see below), and, where possible, information should be provided to support the justification and that assist in the prioritization. Submissions should preferably be made in an electronic format. All submissions must be accompanied by a draft specification.

CPM-11 (2016) agreed that a combined call for topics for standards and tools for implementation should be made.¹⁶

CPM-11 (2016) also agreed that any submission in response to a call for topics and tools should clearly define the problem needing resolution in sufficient detail to determine how it fits into the Framework of Standards and Implementation and the cost/benefit of the development of the standard or tool.¹⁷

The submission of topics for diagnostic protocols is also done using the submission form. The criteria for the prioritisation of diagnostic protocols are given in [Section 8.4](#). Detailed data for phytosanitary treatments is called for separately from the call for topics and uses a different submission form (see [Section 8.8](#)). The [submission form for phytosanitary treatments](#) is posted on the IPP and the prioritization criteria for proposed phytosanitary treatments and score definitions are also given in [Section 8.8](#).

Topics and priorities for standards (including the Framework for Standards and Implementation)

At ICPM-6 (2004) the IPPC Secretariat introduced a paper on the priorities for standards, suggesting that priority will continue to be given to work that has already been started in order to finalize existing draft standards.

The ICPM-6 (2004) *endorsed* the action of the Secretariat in facilitating wherever possible the completion of standards that are already at an advanced stage of development.¹⁸

CPM-11 (2016) *adopted* the [Framework for Standards and Implementation](#) and agreed that it is a working document which will be periodically updated, and provides transparency of existing or proposed standards and tools for implementation and assists with the identification of gaps and it would be a means of capturing agreed priorities for standards and implementation facilitation tools that are separately approved by CPM.¹⁹

The [Framework for Standards and Implementation](#) is maintained publicly on the IPP.²⁰

Compilation of the List of topics by the Secretariat

The Secretariat includes a brief summary of the submission for each topic proposed when presenting these recommendations for additions to the work programme.²¹

¹⁶ CPM-11 (2016), Paragraph 33.4.

¹⁷ CPM-11 (2016), Paragraph 33.6.

¹⁸ ICPM-6 (2004), Paragraphs 47 and 50.

¹⁹ CPM-11 (2016), Paragraph 28.

²⁰ Framework for Standards and Implementation is available at <https://www.ippc.int/en/core-activities/governance/ippc-framework-for-standards-and-implementation/>.

CPM-7 (2012) requested the *List of topics for IPPC standards* be presented to the CPM in order of priority.²²

Posting of the List of topics for IPPC standards

The Secretariat posts the LOT on the IPP and only proposed changes are presented to the CPM.²³

The LOT is posted on the IPP in languages twice a year. The posting occurs after the SC November meeting (before CPM) and after the SC-7 May meeting (after CPM).

Deadlines for posting the English version are:

- 30 January (after November SC and before CPM)
- 30 May (after CPM and May SC).

Other language versions are posted within one month after posting of the English version.

Criteria for justification and prioritization of proposed topics²⁴

Priority will be given to topics with the largest global impact.

Core criteria (must provide information)

- (1) Contribution to the purpose of the IPPC as described in article I.1.
- (2) Linkage to IPPC Strategic Objectives (SOs) and Organizational results demonstrated.
- (3) Feasibility of implementation at the global level (includes ease of implementation, technical complexity, capacity of NPPOs to implement, relevance for more than one region).
- (4) Clear identification of the problems that need to be resolved through the development of the standard.
- (5) Availability of, or possibility to collect, information in support of the proposed standard (e.g. scientific, historical, technical information, experience).

Supporting criteria (provide information as appropriate)

Practical

- (1) Feasibility of adopting the proposed standard within a reasonable time frame.
- (2) Stage of development of the proposed standard (is a standard on the same topic already widely used by NPPOs, RPPOs or a relevant international organization).
- (3) Availability of expertise needed to develop the proposed standard.

Economic

- (1) Estimated value of the plants protected.
- (2) Estimated value of trade affected by the proposed standard (e.g. volume of trade, value of trade, the percentage of Gross Domestic Product of this trade) if appropriate.
- (3) Estimated value of new trade opportunities provided by the approval of the proposed standard.
- (4) Potential benefits in terms of pest control or quarantine activities.

²¹ CPM-5 (2010), Paragraph 70, bullet 6.

²² CPM-7 (2012), Paragraph 59.3.

²³ CPM-7 (2012), Paragraph 58. The *List of topics for IPPC standards* is available at <https://www.ippc.int/core-activities/standards-setting/list-topics-ippc-standards>.

²⁴ Initially adopted by CPM-3 (2008) (Paragraph 89.3 and Appendix 8) and revised by CPM-10 (2015) (Paragraph 74 and Appendix 6).

Environmental

- (1) Utility to reduce the potential negative environmental consequences of certain phytosanitary measures, for example reduction in global emissions for the protection of the ozone layer.
- (2) Utility in the management of non indigenous species which are pests of plants (such as some invasive alien species).
- (3) Contribution to the protection of the environment, through the protection of wild flora, and their habitats and ecosystems, and of agricultural biodiversity.

Strategic

- (1) Extent of support for the proposed standard (e.g. one or more NPPOs or RPPOs have requested it, or one or more RPPOs have adopted a standard on the same topic).
- (2) Frequency with which the issue addressed by the proposed standard emerges as a source of trade disruption (e.g. disputes or need for repeated bilateral discussions, number of times per year trade is disrupted).
- (3) Relevance and utility to developing countries.
- (4) Coverage (application to a wide range of countries/pests/commodities).
- (5) Complements other standards (e.g. potential for the standard to be used as part of a systems approach for one pest, complement treatments for other pests).
- (6) Foundation standards to address fundamental concepts (e.g. treatment efficacy, inspection methodology).
- (7) Expected standard longevity (e.g. future trade needs, suggested use of easily outdated technology or products).
- (8) Urgent need for the standard.

Hierarchy of terms for standards

A hierarchy of terms to clarify the different types of items on which expert drafting groups work was adopted in 2008.²⁵

Topics are both the overarching denomination for the areas of work for the IPPC standards, subdivided into the below three items, as well as the title of one area.

Table 1: Hierarchy of terms for standards

Term	Use	Example
Technical area	The Commission establishes a Technical Panel (TP) to work on a specified technical area (reflected in the title of the TP and described in its specification)	Technical Panel on: Diagnostic Protocols (TPDP) Forest Quarantine (TPFQ) Pest Free Areas and Systems Approaches for Fruit Flies (TPFF) Phytosanitary Treatments (TPPT) Glossary (TPG)
Topic	Calls for topics are made biennially and a topic is added to the <i>List of topics for IPPC standards</i> by the Commission	Revision to ISPM 15 Diagnostic protocols for bacteria Areas of low pest prevalence for fruit flies
Subject	Subjects require approval by the SC. The concept of subject applies only to TPs. The lists of subjects may be revised by the Commission.	Individual treatment within an approved topic Individual diagnostic protocols for a specific pest within an approved topic New glossary term

²⁵ CPM-3 (2008), Paragraph 89.1 and Appendix 7 (following the 2007-07 Focus Group meeting and review by the SPTA and the SC, a hierarchy of terms (technical area, topic, subject) were developed to clarify the different types of items on which expert drafting groups might work).

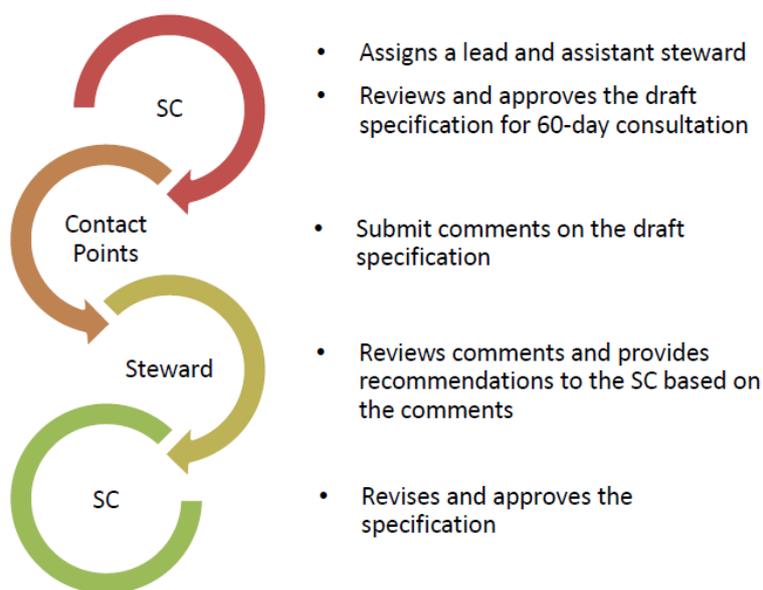


Figure 3: Stage 2, step 3 of the IPPC Standard setting process “development of a specification”

Drafting

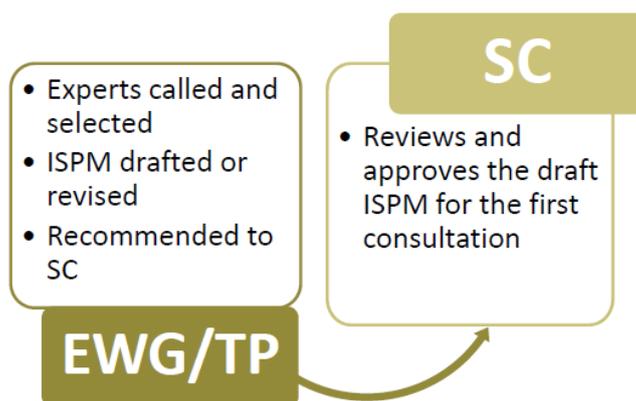


Figure 4a: Stage 2, step 4 of the IPPC Standard setting process “preparation of a draft ISPM”

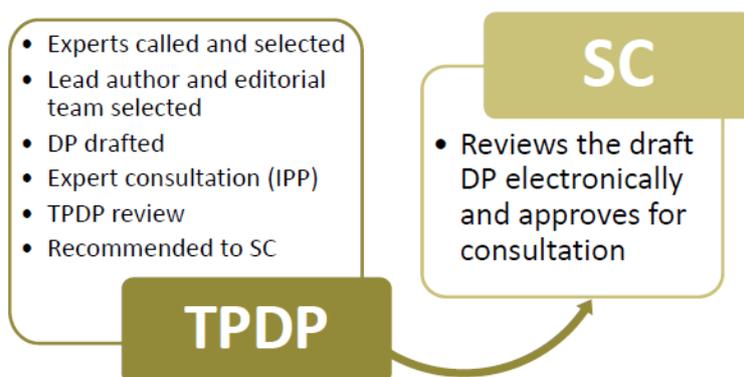


Figure 4b: Stage 2, step 4 of the IPPC Standard setting process “preparation of a draft DP”

Drafting of standards

Drafting of standards involves TPs or EWGs, the SC, stewards of ISPMs and the IPPC Secretariat. More detailed information about these standard setting groups can be found in Sections 6, 7 and 8. The SC oversees the Standard setting process and the Secretariat provides administrative and technical support.

Environmental and biodiversity concerns

The CPM-3 (2008) adopted action items regarding the SPG response to the independent evaluation of the working of the IPPC and its institutional arrangements. This included the inclusion of a statement regarding biodiversity consideration in all standards as appropriate (new standards as they are developed and old standards as they are revised).

When new ISPMs are being drafted, or existing ones revised, consideration of environmental and biodiversity concerns should be included in the specification, where appropriate.²⁶

The task of considering these issues is a task in specifications.²⁷

SC November 2013 agreed to a guidance document on environmental considerations for expert drafting groups. This document is published in the [IPPC Style Guide](#).

²⁶ CPM-3 (2008), Paragraph 55.2, Appendix 2.

²⁷ SC 2009-05, Paragraph 37.



Figure 5a: Stage 3, step 5 of the IPPC Standard setting process “first consultation for ISPMs”

Drafting

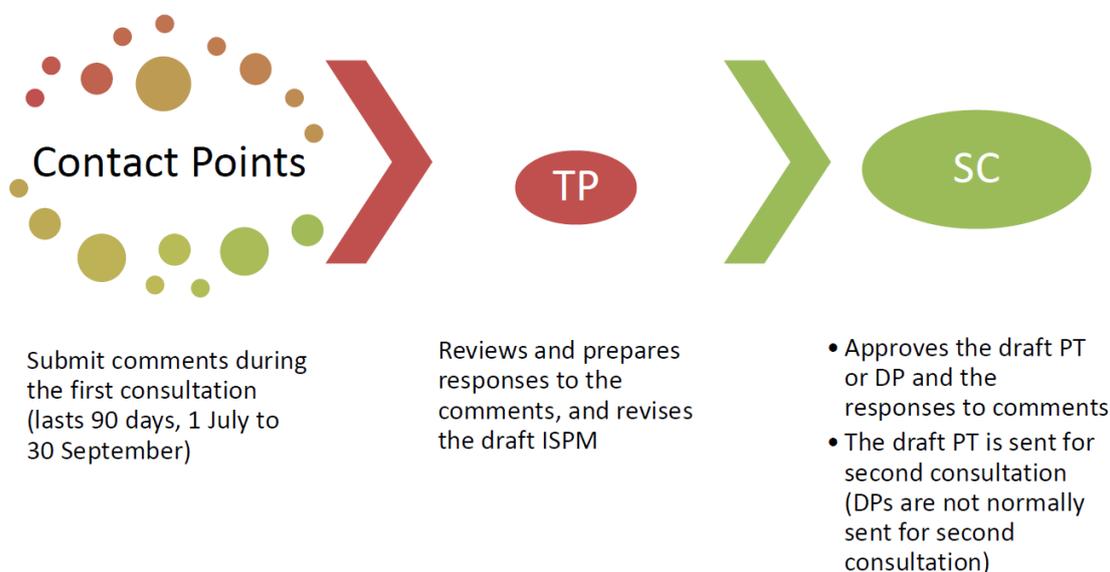


Figure 5b: Stage 3, step 5 of the IPPC Standard setting process “first consultation for DPs and PTs”



Figure 6: Stage 3, step 6 of the IPPC Standard setting process “second consultation”

3.2 Consultation and review

During the consultation stage, CPs, RPPOs, international organizations, national plant protection services of non-CPs, and other entities as decided by the SC review and comment on the draft standard. Comments on the draft standards are considered first by the steward, second by the SC-7 and then the draft is revised accordingly. The draft is submitted afterwards to the second consultation period and then to the SC. The SC will revise the draft and decide whether to recommend it to CPM for adoption.

A draft ISPM is normally submitted to two consultation periods, although additional consultation periods can be held if deemed necessary.²⁸

CPM-11 (2016) adopted adjustments to the IPPC Standard setting procedure. There are now two or more consultation periods but without specific emphasis on the type.

Posting of draft ISPMs on the Online Comment System and distribution of hard copies by mail

The IPPC Secretariat posts the language versions²⁹ of standards for consultation periods in the Online Comment System (OCS) as soon as they are available, and informs IPPC contact points that the draft standards for consultation are available. The Secretariat also posts the drafts on the IPP for wider distribution.

After 31 December 2012, individual contracting parties may request the Secretariat in writing, explaining their exceptional circumstances, to provide paper copies of IPPC communications and documents.³⁰

Regional workshops on draft ISPMs³¹

Regional workshops on draft ISPMs provide a forum for countries within a region to discuss issues related to draft ISPMs and to prepare and share comments to use as a basis for their national comments. Countries must submit national comments through their Official contact point in the OCS in order for them to be considered by the SC. These regional workshops are funded through the IPPC Multi-donor Trust Fund, as decided by the Commission, or by specific donations.

CPM-11 (2016) noted that the IPPC regional workshops are a valuable and essential tool for developing phytosanitary capacity for contracting parties and that the change of content in the IPPC regional workshops has been a successful strategy to increase and align the knowledge on IPPC related issues in all regions.³²

Organizational arrangements for regional workshops³³

Participation and responsibilities

- Invitations to the workshops should be drafted by the IPPC Secretariat, sent to the organizers and then sent by the organizers to the NPPOs in advance. This will allow sufficient time for the

²⁸ The possibility to send a draft ISPM to another round of consultation is foreseen in [step 5](#) and [step 6](#) of the Standard setting process (2016).

²⁹ The CPM-5 (2010) requested the Secretariat to provide a mechanism for the requests for translation into FAO languages before the member consultation on draft ISPMs; and agreed that this mechanism be re-evaluated at the CPM-6 (2011) (CPM-5 (2010), Paragraph 89).

³⁰ CPM-6 (2011), Paragraph 127.

³¹ ICPM-6 (2004) adopted the name change, formerly “Regional Technical Consultation on Draft ISPMs” (ICPM-6 (2004), Appendix IX, 4.2).

³² CPM-11 (2016), Paragraph 111.2.

³³ SC 2011-05 (2011_SC_May_42), agreed by CPM-7 (2012), presented to CPM-8 (2013) and to CPM-9 (2014) Attachment 2 of CPM 2014/16.

IPPC Secretariat to contact the selected participants and provide information prior to the workshop.

- Participants are responsible for analyzing the documents provided, collecting and preparing national comments prior to attending the workshop and providing feedback on the workshop using the survey tool (available on the IPP).
- Participants are asked to attend all sessions of the workshop and respect the established timeframes and participation conditions.
- The IPPC Secretariat should contact the organizer well in advance of the workshop to discuss the programme and review the roles and responsibilities of those involved.
- The workshop organizer shall be responsible for sending the invitations (following the letter of invitation developed by the IPPC Secretariat), providing the facilities needed for the workshop and making all necessary logistic arrangements.
- Regions may invite Bureau members, SC members or stewards from their region or from other regions as resource persons who may participate in discussions and help enhance a better understanding of the concepts of the draft standards, of the Standard setting process and other IPPC related activities. These resource persons should be proactive in helping to facilitate workshop discussions. Participation of these resource persons is contingent on available financial resources.

Agenda and report

- The IPPC Secretariat shall provide a standardized agenda for the workshops.
- The workshops could integrate other topics of regional concern or topics of specific interest for building national phytosanitary capacity or to obtain information on the implementation of standards. Any adjustments to the agenda should be agreed upon with the IPPC Secretariat. Adequate time should be allocated for a thorough discussion of the draft ISPMs.
- The report of the workshop should be prepared during the workshop as a joint effort of the Chairperson, Rapporteur and IPPC Secretariat staff, approved by the participants during the meeting and posted on the IPP within two weeks.

Evaluation

- The IPPC Secretariat shall provide a summary of the workshop evaluation to the CPM, Bureau and SC, based on the results of the survey completed by the participants and the reports of IPPC Secretariat staff.

Deadlines for presentations by stewards on draft ISPMs

- The IPPC Secretariat prepares and makes the draft ISPMs available for first consultation via the Online Comment System (OCS) as soon as possible after the May Standards Committee (SC) meeting and no later than the 1 July.
- The IPPC Secretariat provides a PowerPoint presentation template for use by the stewards. The stewards prepare an overview of the draft ISPMs in both a summary document and Power Point presentation. The presentation should summarize the main elements of the proposed draft standard. For the benefit of time and efficient use of resources, the presentation should be concise as it is not intended to replace the text of the draft standard. It should also explain key issues discussed at the SC. Stewards are requested to submit their summary document and presentation to the IPPC Secretariat no later than 15 June. The Secretariat posts the summary documents and presentations on the IPP.
- Organizers are requested to assist in translating the presentations into other languages as appropriate. All translated summary documents and/or presentations should be submitted to the IPPC Secretariat to also be posted on the IPP.

Recommendations for regional technical assistance/consultation

As many as possible regional technical consultations on draft ISPMs should be conducted and the Commission should investigate potential mechanisms to expand these consultations as well as seek to

build opportunities for regional consultations through the trust fund or voluntary contributions. RPPOs should play a role, as appropriate, in such regional workshops within their region³⁴.

Guidelines for the submission of comments

Submitting comments following the guidelines below helps ensure the maximum benefit from the consultation process and faster compilation of comments:

- IPPC contact points are provided 90 days to review the draft standards, consult on their content and compile and submit comments to the Secretariat.
- Compiled comments will be made available by the Secretariat.
- IPPC contact points should submit comments for each standard using the Online Comment System (OCS) (<https://ocs-new.ippc.int>). Comments must be submitted through the IPPC contact point.
- In addition, at its May 2011 meeting, the Standards Committee (SC) reviewed the classification of comments and their definitions. The SC developed a document to give guidance and to explain the different categories of comments, and these categories had been used in the OCS. The classification of comments and their definitions are below:³⁵
 - **EDITORIAL:** This type of comment clarifies or simplifies the text without changing the meaning. This includes spelling or grammatical corrections, suggestions of different but equivalent words, and simplification of sentence structure.
 - **SUBSTANTIVE:** This type of comment takes into account conceptual changes and the addition of new aspects or ideas. This class of comments contains additions or extensions as well as changes, reorganization of the text or deletions resulting in alteration of the content of a sentence /paragraph /section of the draft. It is that this point is addressed in the revision process in some way.
 - **TECHNICAL:** This type of comment takes into account scientific corrections and technical adjustments. It aims at further clarification and improvement of the standard and sometimes at conformity with other standards from the technical viewpoint. These comments are incorporated unless there is disagreement or some misunderstanding.
 - **TRANSLATION:** This type of comment corrects points that are considered to be inaccurately translated into another language version of the text.
- With the OCS, IPPC contact points can share comments with other contact points. If a contracting party wishes to support some or all of the comments submitted by another contracting party or RPPO, they should accept these comments as their own comments in the OCS, and then submit them. The name of the country will still appear in the comments compiled for the SC.³⁶
- Comments should be supported by an explanation of their purpose. Alternative text should be proposed where appropriate. It is essential that care is taken to ensure all comments and rationales are clear.
- Note that paragraphs in the draft standards are numbered. It is essential to ensure that the paragraph numbers used when submitting comments correspond to those of the draft standard as sent for consultation as these numbers will be used to compile the comments for the SC.
- Due to the short time available between the end of the consultation period and the SC meeting, and to avoid misinterpretation in translation, countries submitting comments in a language other than English are encouraged to send an English translation as well.

³⁴ ICPM-6 (2004), Appendix IX, 4.

³⁵ SC May 2011 agreed text based on discussion paper 2011_SC_May_38.

³⁶ Comments from RPPOs are considered to represent the views of the organization and may be based on consultation within the organization. Such comments, however, are not considered to represent the views of individual contracting parties unless specifically indicated as such by the contracting party(ies).

Note: The Secretariat distributes to the SC only comments received from contracting parties, RPPOs and relevant international organizations. Any comments on the draft standards from other sources should be channelled through the national IPPC contact point for the respective countries. IPPC contact points can be found on the IPP (<https://www.ippc.int/countries/all/contactpoints>).

Comments on implementation issues are requested for all standards that are submitted for consultation.³⁷

Specific note regarding the *Amendments to the Glossary* in relation to the second consultation.³⁸

In May 2013, the SC agreed that the *Amendments to the Glossary* follow the same process as the regular ISPMs, but that the SC-7, when considering the *Amendments to the Glossary* after the first consultation, could consider separating them in two sets: one going for second consultation (terms and definitions for which comments were made), one going directly to the SC in November (terms and definitions for which no comments were made).³⁹

³⁷ SC 2016-05, Paragraphs 63 and 64.

³⁸ SC 2013-05, agenda item 9.5.

³⁹ Editorial changes made to align the text to the IPPC Standard setting procedure, 2016.

3.3 Objections

Following [stage 4, step 7](#) of the Standard setting process (2016), contracting parties may submit objections three weeks before the CPM session. Underlying this is also the fact that the CPM does not envisage drafting standards during the session.

There should be no drafting of International Standards for Phytosanitary Measures (ISPMs) at the annual CPM meeting.⁴⁰

The CPM-8 (2013) approved the *Criteria to help determine if an objection is technically justified*.⁴¹

*Criteria to help determine whether a objection is technically justified*⁴²

A. General criteria

For all draft ISPMs, an objection should be considered technically justified in cases such as:

- parts of the draft ISPM conflict with the provisions of the IPPC
- parts of the draft ISPM are inconsistent with adopted ISPMs
- there are technical inaccuracies present in the draft ISPM
- it is supported by scientific justification or other technical evidence
- parts of the draft ISPM conflict with technical provisions of other international agreements which the SC considers relevant to plant health.

B. Criteria for draft phytosanitary treatments

For PTs, an objection could be considered technically justified if any of the following apply:

- it refers to inconsistencies in the degree to which the treatment supports efficient phytosanitary measures in a wide range of circumstances
- the level of efficacy of the treatment is not experimentally supported (quantified or expressed statistically)
- it considers the potential effects on the product quality and intended use of the regulated article
- it provides technical information demonstrating the treatment is not feasible and applicable for use primarily in international trade or for other purposes (e.g. to protect endangered areas domestically, or for research). This may include factors noted in ISPM 28, which provides some guidance on what may constitute a technical justification.

C. Criteria for draft diagnostic protocols

For DPs, an objection could be considered technically justified if any of the following apply:

- it refers to inaccuracies in any of the technical information
- it refers to inaccuracies in the description of the pest, including signs and symptoms associated with the pest and methods of detecting the pest in a commodity
- it refers to the meeting of the requirements of the protocol for the diagnosis of the pest as described in ISPM 27, such as minimum requirements, reliability and flexibility for use in a wide range of circumstances, etc.
- it refers to whether the methods take into account the expertise needed, the availability of equipment and the practicability (e.g. ease of use, speed and cost).

⁴⁰ Adopted by CPM-7 (2012), Appendix 4 (Decision 1 on “CPM Decision on improving the Standard setting process”).

⁴¹ CPM-8 (2013), paragraph 79.

⁴² CPM-8 (2013), Appendix 4.

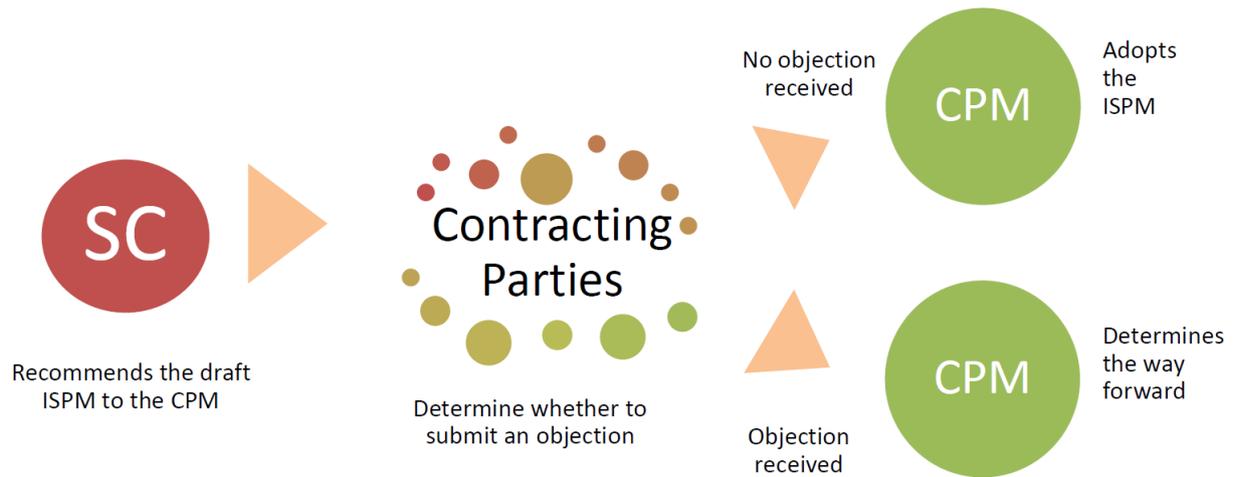


Figure 7a: Stage 4, step 7 of the IPPC Standard setting process (excluding DPs) “adoption”



Figure 7b: Stage 4, step 7 of the IPPC Standard setting process “adoption of DPs”

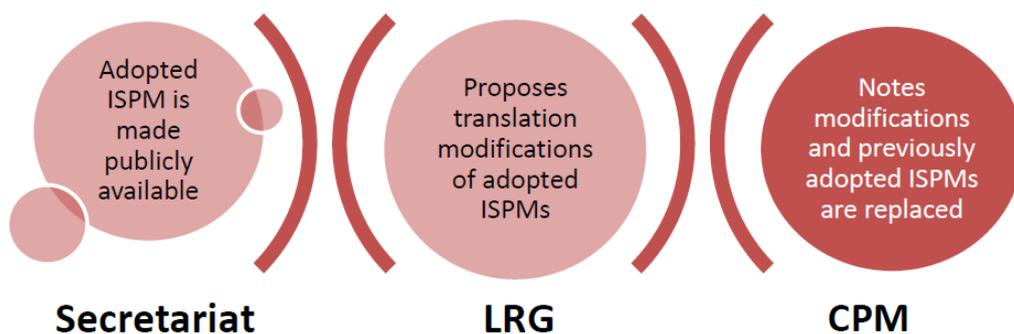


Figure 8: Stage 4, step 8 of the IPPC Standard setting process “publication”

3.4 Publishing and adjustments

3.4.1 Language Review Groups

Procedure to correct errors in International Standards for Phytosanitary Measures (ISPMs) in language versions other than English after adoption⁴³

Representatives from national plant protection organizations (NPPOs) and regional plant protection organizations (RPPOs) from each FAO language group, other than English, are invited to organize a Language Review Group (LRG) to consider the preferred use of terminology and to identify editing and formatting errors resulting from translation. Each LRG should identify a coordinator for communications with the Secretariat, describe how they will organize communications within the group (e.g. teleconference, exchange of documents etc.), explain its structure and respond to queries from members on how to join the LRG. Each LRG should invite a representative from the appropriate FAO language translation group and the respective TPG member(s) for that language to participate in order to ensure a clear understanding of the LRG issues.

Once established and recognized by the Secretariat, each LRG is invited to review adopted ISPMs and submit comments, in track changes, on terminology preferences, editorial and formatting mistakes to the Secretariat through their identified coordinator no later than three months after they have been advised that the adopted ISPMs are posted on the IPP (www.ippc.int); this time begins for the specified language once the ISPM has been posted on the IPP in that language.

FAO translation services may participate as a member of the LRG but any official communication on proposed changes to the ISPMs should come from the LRG Coordinator to the IPPC Secretary (ippc@fao.org) in order to maintain version control of the standards.

If no comments are submitted, the version adopted at CPM would remain the final version.

If comments are submitted by the LRG coordinators through the above process, the Secretariat will forward the comments, in track changes, to the FAO translation services.

The FAO translation services will review the proposed changes. If all proposed changes are acceptable by the FAO translation services, the track change version of the ISPM produced by the LRG will be forwarded to the Secretariat. If FAO translation services disagree with any of the LRG proposed changes, they will document the reasons and consult with the LRG to discuss and seek consensus. If consensus cannot be achieved, the FAO translation service will make the final decision.

Comments regarding the translation of glossary terms will be transmitted to the Technical Panel for the Glossary (TPG) through the SC as they may result in consequential changes to numerous ISPMs. Formatting issues would be addressed by the Secretariat.

The Secretariat will post the modified ISPMs on the IPP as a document for the next CPM meeting. The CPM agenda will include a standing item for verification of modifications and a corresponding paper will indicate which ISPMs have been modified along with reasons why any LRG-proposed changes have not been accepted. This agenda item will not be used to re-open discussion on already adopted ISPMs; it is strictly to verify terminology, editorial and formatting corrections.

The CPM will request the IPPC Secretariat to accept all track changes as presented and revoke previously adopted versions of the ISPMs.

Note: the Secretariat will process only LRG reviewed standards within the established deadline.⁴⁴

[More information on language review groups can be found on the IPP \(click here\).](#)

⁴³ CPM-8 (2013) (Replaces procedure adopted at CPM-6 (2011), Appendix III, and previously adopted at CPM-5 (2010), Appendix 9).

⁴⁴ CPM-7 (2012), Paragraph 56.3.

3.4.2 Procedures for urgent alteration or suspension of ISPMs after adoption

Procedures for urgent alternation or suspension of ISPMs after adoption were adopted at the ICPM-6 (2004) which:⁴⁵

- *Noted* that emergency suspension or withdrawal of an approved ISPM or elements of an ISPM, as had occurred in the case of the original ISPM 15 logo, was an extremely unlikely event.
- *Noted* that each situation needed to be evaluated on a case by case basis and that it was impossible to predict the circumstances where emergency suspension and/or withdrawal of an ISPM may be needed.
- *Noted* that the Commission functions within the framework of the FAO and therefore the FAO had the responsibility and mandate for the governance of the Commission (decision making and financial), and to protect the interest of Parties under exceptional and urgent circumstances.
- *Noted* that under this mandate the FAO had the responsibility to act quickly in cases where a risk was posed to the ability of the FAO to carry out its core responsibilities and requirements under the FAO Constitution and Basic Texts governing its operations.
- *Noted* the importance of promoting transparency and consultation between the FAO and the appropriate bodies established under the IPPC with respect to any such possible action, but also that circumstances may arise (for example with some types of legal action) where there were requirements for confidentiality and it may not be possible to provide at a certain stage full details to the Commission.
- *Agreed* that, where recommendations relating to the emergency suspension or withdrawal of an approved ISPM were being considered by the FAO:
 - As far as possible any recommendations should be discussed and endorsed by an emergency meeting of the Commission Bureau.
 - The Commission should be informed of any recommendations and justifications as soon as possible.

3.4.3 Ink amendments

CPM-11 (2016) noted the process for translating and incorporating ink amendments previously noted in English to the other official language versions of ISPMs.⁴⁶

[This decision entails that ink amendments are translated and incorporated into the other official language versions of ISPMs. Nevertheless, this work is done only as financial resources are identified.](#)

⁴⁵ ICPM-6 (2004), Paragraph 89.

⁴⁶ CPM-11 (2016), Paragraph 48.1

3.5 Mechanism for revoking standards

The SC in November 2014 agreed on a mechanism for the replacement of standards with the aim of clarifying which version in each language for each ISPM is the one in force. To facilitate the future revocation of previous versions, the SC agreed that:⁴⁷

- The year of adoption and date last modified will be contained on the cover page of ISPMs but not associated with the title.
- The year of adoption will not be quoted when referencing an ISPM in texts.
- The year of adoption will change when an attachment is revised or added and adopted (except for ISPM 27 (*Diagnostic protocols for regulated pests*) and ISPM 28).
- Diagnostic protocols and phytosanitary treatments will continue to be published separately, the appendixes in ISPM 27 and ISPM 28 listing the annexes will be deleted.
- ISPMs will be mentioned only collectively in the *References* section of other ISPMs.
- Previous versions of ISPMs that have been revoked will be marked with “REVOKED” across all pages (as resources allow).
- Direct quotations from ISPMs will be removed where possible.
- Cross-references to section numbers in ISPMs will be removed.

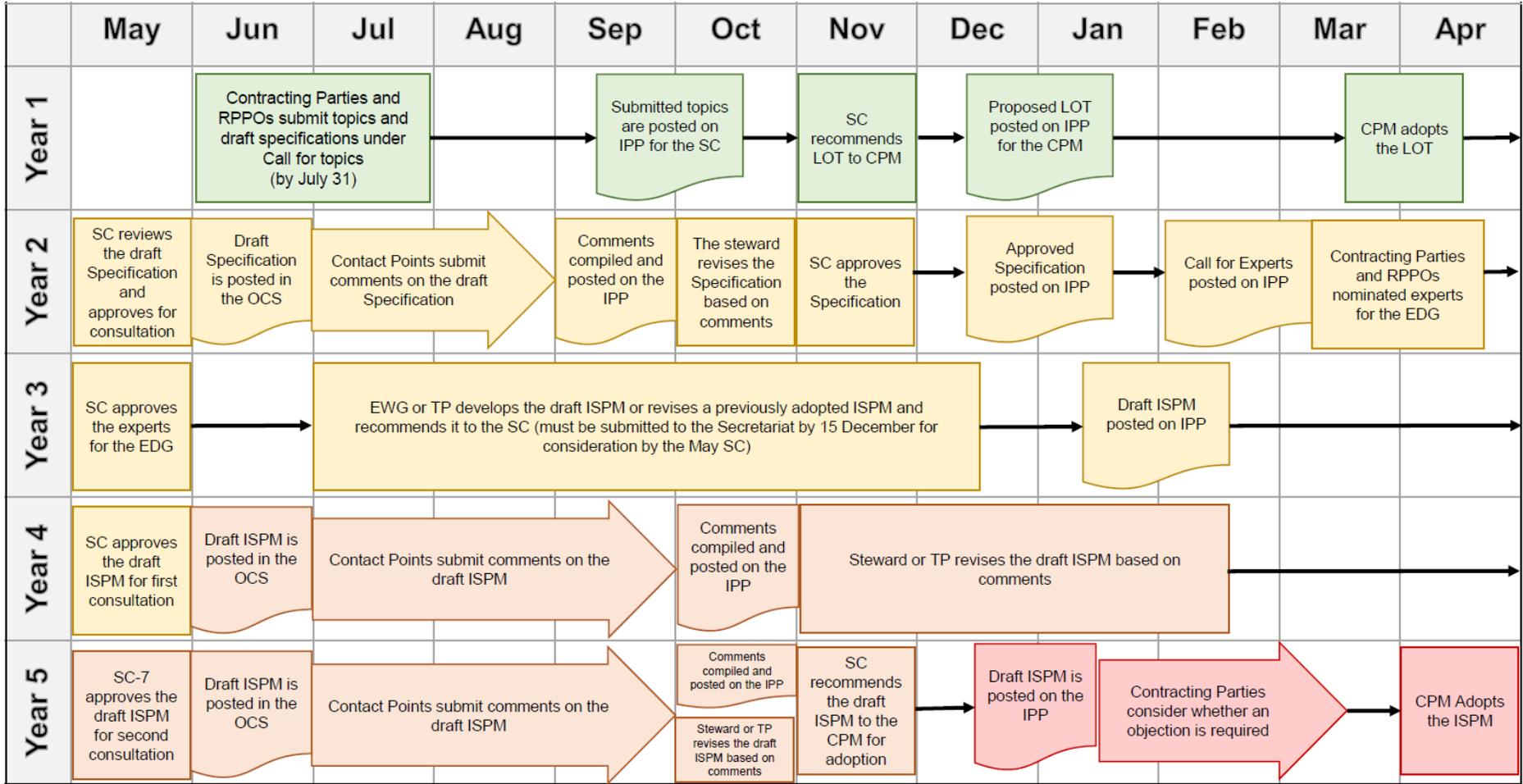
For the Mechanism to simplify future revision and adoption, the SC:⁴⁸

- (1) *noted* that ISPMs will not be individually mentioned any more in the *References* section of ISPMs, however a generic text referring to all ISPMs collectively will be added in the *References* section.
- (2) *noted* that the date of adoption will not be indicated every time as ISPM is quoted in the text of another ISPM.
- (3) *noted* that in future revisions of ISPMs that direct quotations from ISPMs and cross-references to sections other ISPMs will be avoided.
- (4) *requested* the Secretariat to add the following task to all current specifications for a revision to an ISPM where drafting has not begun: “review all references to the ISPM under revision in other ISPMs to ensure that they are still relevant and propose consequential changes if necessary”.
- (5) *noted* when revisions of ISPMs are prepared for first consultation that consequential changes to other ISPMs will also be presented.
- (6) *noted* when revisions of ISPMs are presented to the CPM for adoption that the consequential changes will also be presented as ink amendments.
- (7) *noted* that upon adoption of a revised ISPM, the CPM will be requested to revoke the previous version of the ISPM and the newly adopted revision will replace the previous version.

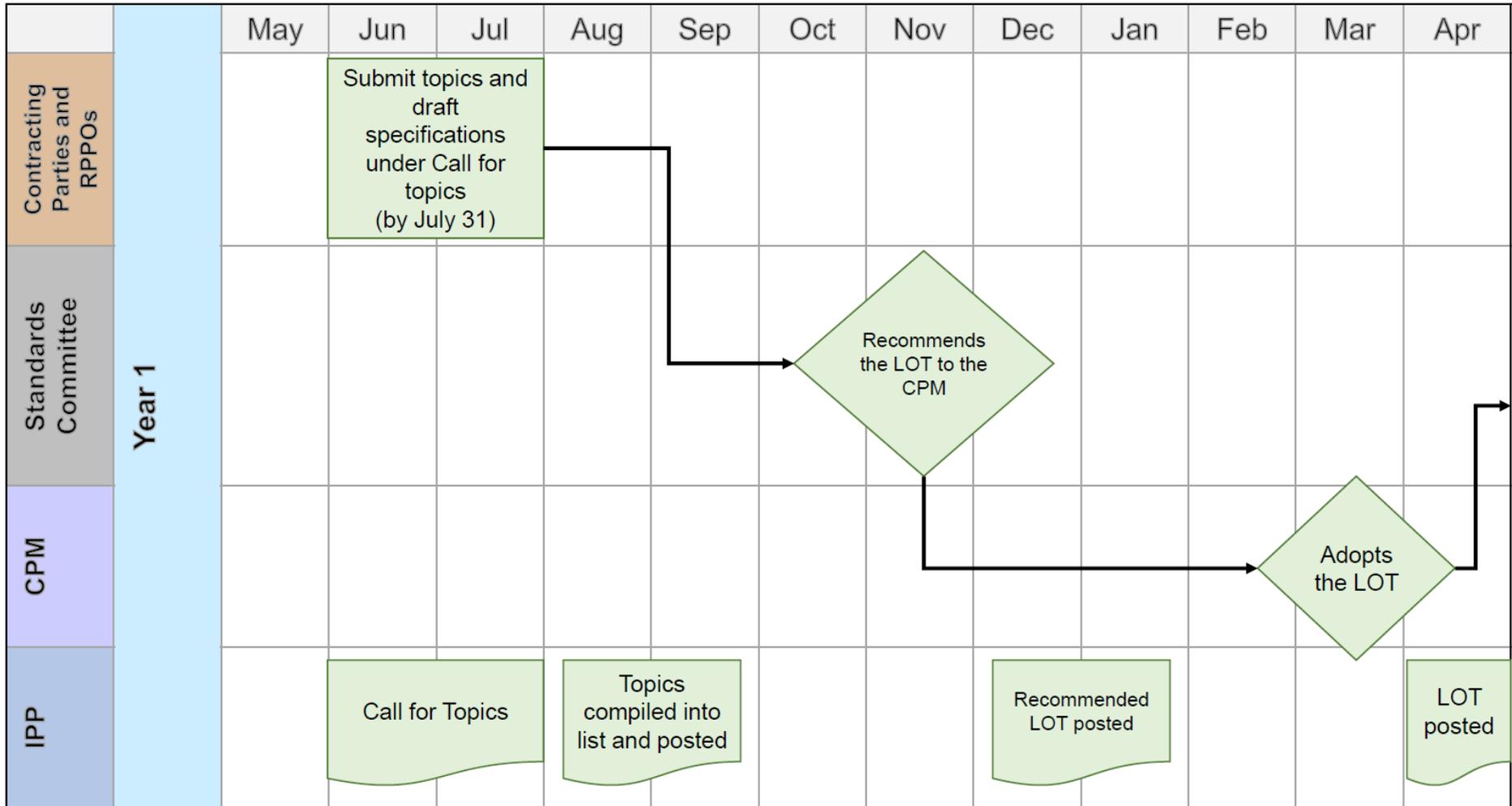
⁴⁷ SC 2014-11, agenda item 4.3.

⁴⁸ SC 2014-11, agenda item 4.3.

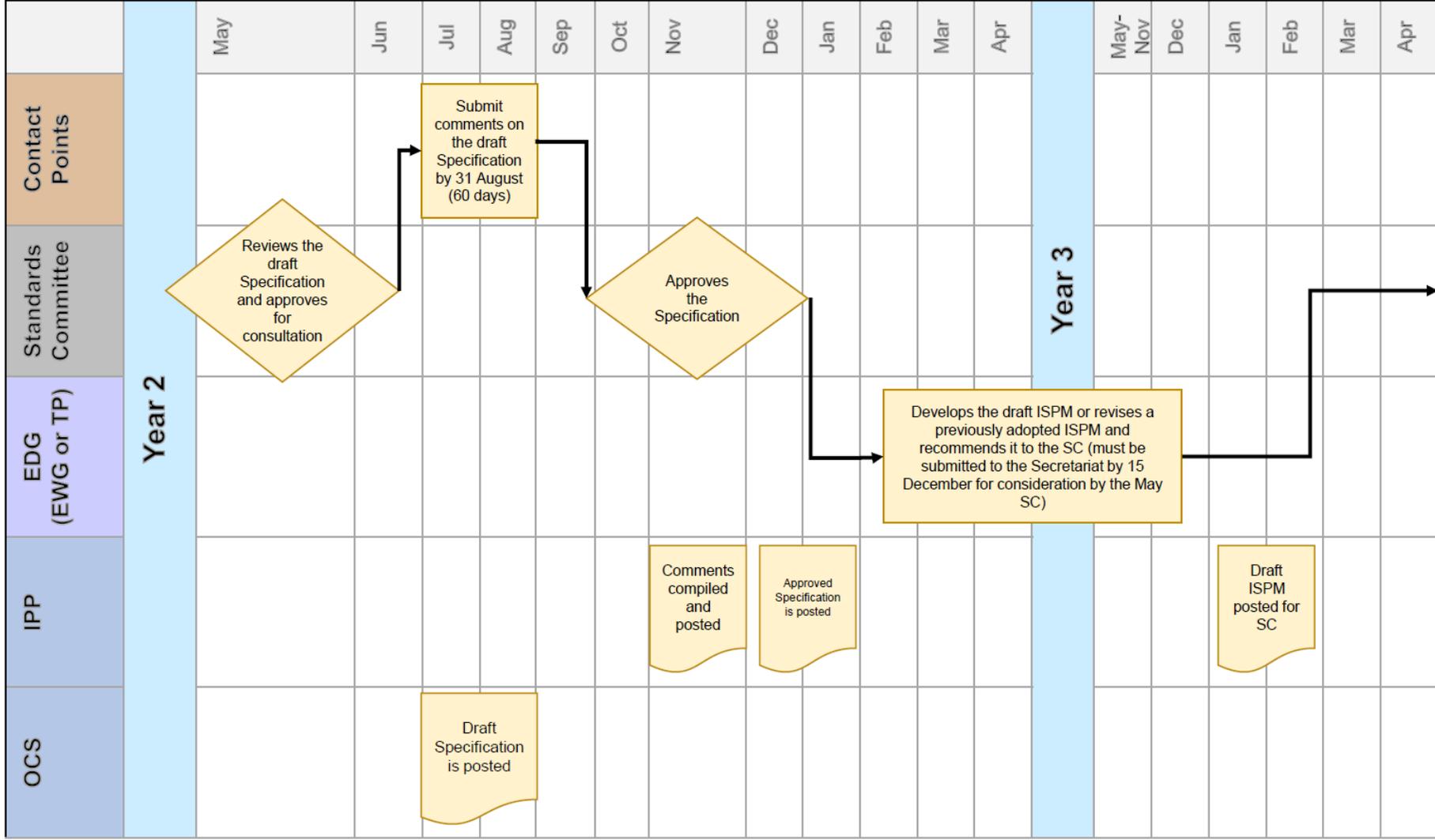
Flowchart 1: The whole Standard setting process



Flowchart 2: Stage 1 of the Standard setting process

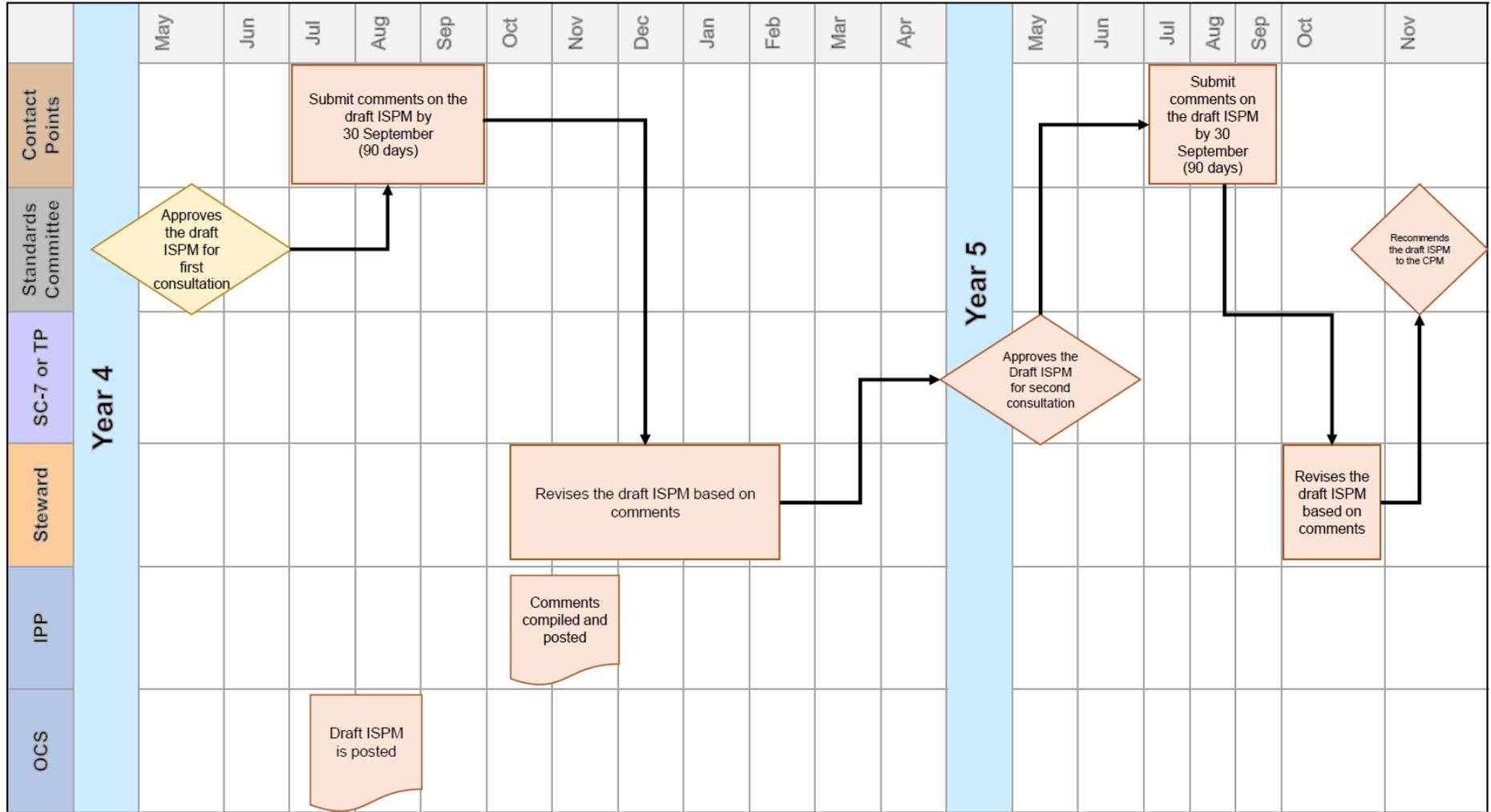


Flowchart 3: Stage 2 of the Standard setting process

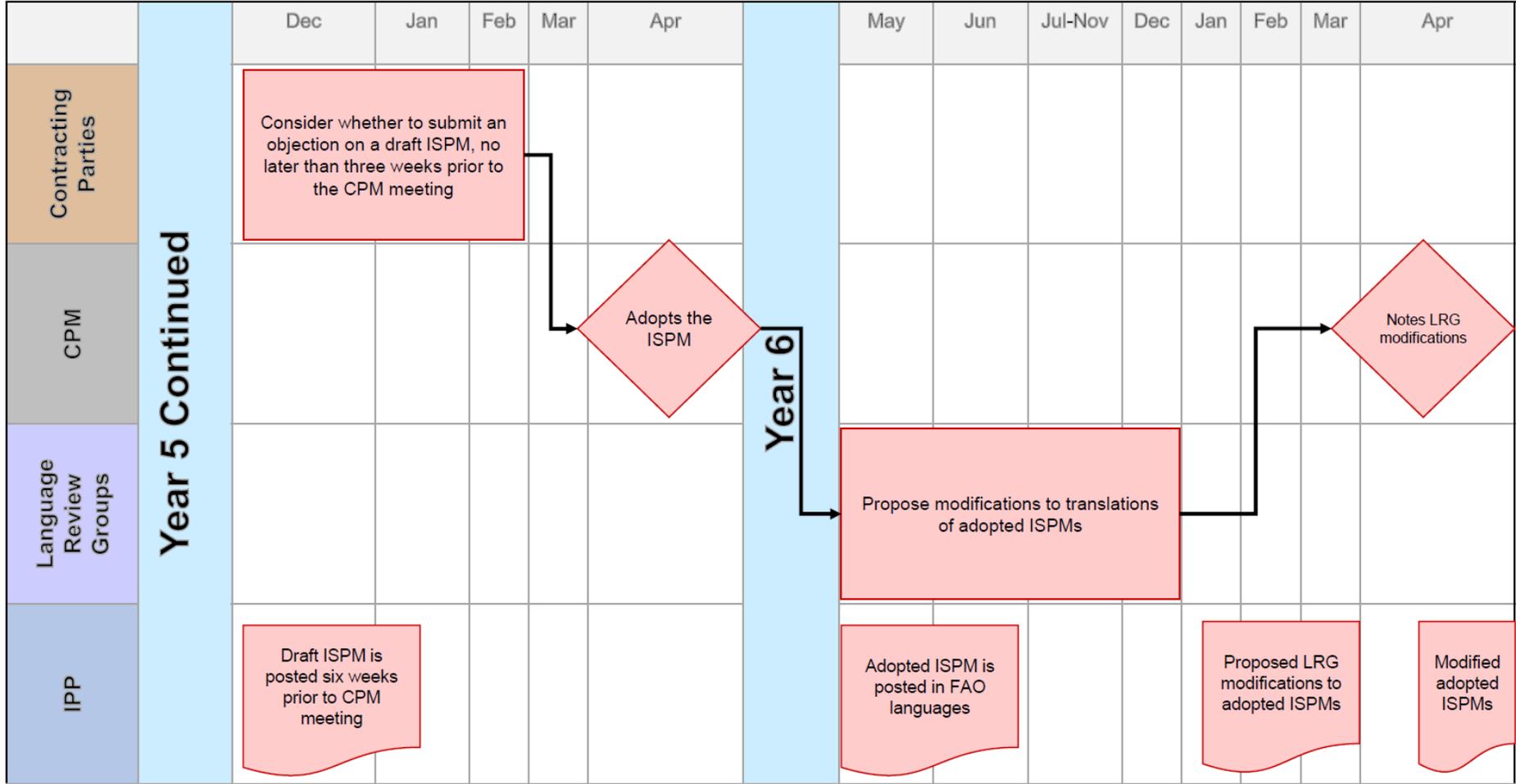


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Flowchart 4: Stage 3 of the Standard setting process



Flowchart 5: Stage 4 of the Standard setting process



4. GENERAL CONSIDERATIONS ON STANDARD SETTING⁴⁹

All ISPMs shall be developed following the same IPPC Standard setting process. Some slight variations, such as electronic decision-making should continue to apply to DPs and PTs.

The following variations to the proposed IPPC Standard setting process would apply in these cases:

- Steps in the Standard setting process are not restricted to any specific time of the year, although first and second consultation would be at defined times.
- The SC can make decisions electronically.
- Unlike other draft ISPMs, DPs and PTs are not considered by the SC-7, but are considered and resolved by the relevant technical panel (TP)⁵⁰. The SC approves these drafts for consultation by e-decision and these are made available to IPPC contracting parties only after approval, because they are not SC meeting documents (see [Provisions for the availability of standard setting documents](#)).

As part of the Standard setting procedure, the following items should be considered when developing specifications and drafting standards, when providing and considering comments and when adopting standards. These general considerations, although not presented as part of the Standard setting procedure, form an integral part of the Standard setting process. They are taken into account in order to ensure that:

- The Standard setting procedure follows a transparent process (including, for example, publishing relevant documents as laid out in [Provisions for the availability of standard setting documents](#), consulting with contracting parties, etc.).
- The ISPMs are of high quality and science based.
- The ISPMs are developed according to the Commission-agreed priorities.
- All contracting parties have a chance to be involved and to participate in the process, which includes appropriate funding mechanisms for participation in meetings. Domestic stakeholders are involved by the means of the contracting parties.
- The Standard setting procedure follows a consistent process.
- The standard setting programme is implemented using the available IPPC standard setting resources and national or regional funding mechanisms.
- The ISPMs are presented to the Commission for adoption after all stages are completed and when no extensive discussion is needed.
- The hierarchical relationship between all groups, panels and committees involved in Standard setting process is clear.
- The Standard setting procedures and processes facilitate the development and adoption of standards; they are flexible and periodically reviewed.
- Unnecessary bureaucratic steps, which reduce efficiency without improving output, are avoided.

⁴⁹ CPM-3 (2008), Paragraph 92.1, Appendix 9 and *Improvements to the Standard setting process* adopted by CPM-7 (2012), Appendix 4, Decision 7.

⁵⁰ Note that DPs are not submitted to the second consultation period.

4.1 Financial considerations⁵¹

The ICPM-2 (1999) *noted*:

- Whenever possible, SC members and those participating in standard setting activities should voluntarily fund their travel and subsistence to attend meetings. Members may request financial assistance from the FAO for meetings other than those associated with the Commission meeting, with the understanding that the priority for financial assistance is given to representatives from developing countries.
- The financial resources made available to the Secretariat for the work programme, including savings realized by members and others voluntarily accepting costs for participation in the SC or activities associated with standard setting, be directed as far as possible to expanding the work programme for the establishment of standards and assisting the participation of developing member countries.
- Extra budgetary funds be made available for developing countries to participate in ad hoc Open-ended Discussion groups.
- Sponsors and donors be encouraged to make contributions to the work programme.

Rules for directed financial assistance for standard setting (sponsorship of standards)⁵²

The provision of external resources for standard setting should:

- be applied only for standards that are approved as priorities by the Commission
- not create an undue resource drain on the work programme of the Secretariat
- not displace core programme priorities
- follow the normal procedures, policies and practice of standard-setting with no modifications according to the preferences of the funding entity.

4.2 Transparency

The ICPM-2 (1999) determined that:⁵³

- maximum practical transparency be encouraged in the Standard setting procedure
- the Commission should encourage the wide use of electronic communication and the Internet in the Standard setting procedure.

Recommendations for an improved transparency to and from the SC

To improve the transparency:⁵⁴

- All consultation comments should be published on the IPP.
- The IPPC Secretariat should produce and make accessible a generic summary of SC reactions to classes of comments made during consultation periods.
- Members of the SC should report back to countries in their regions.
- Guidelines for members of the SC to be developed should incorporate guidance on this reporting function of SC members.

Recommendation on the use of modern communications

E-mail, teleconferencing and other modern communication methods should be used where possible to advance discussion on standards. However, face-to-face meetings of experts should be continued with e-mail communications used to supplement these meetings, not replace them.⁵⁵

⁵¹ ICPM-2 (1999), Appendix VII.

⁵² ICPM-4 (2002), Appendix XI.

⁵³ ICPM-2 (1999), Appendix VII.

⁵⁴ ICPM-6 (2004), Appendix IX, Paragraph 6. See also [Provision for the availability of standard setting documents](#).

4.3 Role of regional plant protection organizations in standard setting

Regional plant protection organizations (RPPOs):⁵⁶

- establish regional standards and provide them to the Secretariat
- encourage cooperation between their member countries in the preparation of:
 - proposals for new or revised ISPMs
 - deposit of regional standards as candidates for ISPMs
 - comments on specifications for new or revised ISPMs
 - comments on draft ISPMs received for consultation
- cooperate with the Secretariat in support of the work programme.

⁵⁵ ICPM-6 (2004), Appendix IX, Paragraph 7.

⁵⁶ CPM-3 (2008), Paragraph 99.1 and Appendix 12.

4.4 Provisions for the availability of standard setting documents

The CPM-3 (2008) adopted provisions for the availability of standard setting documents⁵⁷. CPM-4 (2009) and CPM-11 (2016) modified these slightly.⁵⁸

Table 2. Provisions for the availability of standard setting documents

	Type of document	Level of access ⁵⁹	Notes
Expert drafting groups (EWGs, TPs)	Working documents	Relevant expert drafting group	As currently.
	Reports	Not restricted (public)	Once approved by the expert drafting group.
Standards Committee: input	Agenda* and list of participants	Contracting parties, RPPOs and SC	
	List of SC documents	Contracting parties, RPPOs and SC	Indicating who has access to each document.
	Draft ISPMs and draft specifications presented to the SC	Contracting parties, RPPOs and SC	Duly marked as a draft and numbered as an identifiable version.
	Draft PTs and DPs presented to the SC are posted for the SC in the e-decision forum;	SC only	
	Discussions on SC e-decisions are reported in the following SC report.	Not restricted (public)	
	Compiled consultation comments on draft specifications	Contracting parties, RPPOs and SC	
	Compiled consultation comments on draft ISPMs	Not restricted (public)	
	Detailed stewards' reactions to consultation comments	SC only	
	A summary of major issues discussed is produced (for both draft ISPMs and draft specifications)	Not restricted (public), as part of the SC report	
	Other SC documents	Contracting parties, RPPOs and SC, or SC only	This will be determined on a case by case basis. The SC will consider at its next meeting how this case-by-case decision will be made.
Standards Committee: output	All documents approved by the SC during its meetings	Not restricted (public), as annexes to the SC report	Documents approved to be processed further are included as annexes to the SC report, and will therefore be available without restriction.
	SC report	Not restricted (public)	As currently.

⁵⁷ CPM-3 (2008), Paragraph 99.1 and Appendix 12.

⁵⁸ CPM-4 (2009), Paragraph 126.6; CPM-11 (2016), Paragraph 62.4.

⁵⁹ "Contracting parties" means that the contact points and IPP editors of contracting parties will have access to the relevant work area and documents on the IPP. Bureau members currently have access to all restricted work areas on the IPP; the Bureau is therefore not mentioned here.

	Type of document	Level of access ⁵⁹	Notes
Others	Compiled list of detailed proposals for topics for inclusion in the <i>List of topics for IPPC standards</i>	Not restricted (public)	
	Any document whose access is restricted according to the above	Group concerned	In this case, an SC member or a contracting party could request access to the document. This document would be made available with the prior agreement of the SC and, if applicable, of the person or group preparing the document.

* A simple agenda for all standard setting meetings is posted on the IPP calendar (public).

Distribution of ISPMs

All adopted ISPMs are published in Adobe Acrobat PDF on the IPP. Given the lead times on final translation and resource constraints, some language versions may be available before others.

The use of electronic means for distributing ISPMs should be promoted. Contact points should be notified when electronic versions are available and should be encouraged to make use of electronic versions wherever possible. Contact points with adequate electronic communication systems should be encouraged to make use of the electronic version of the ISPM and circulate it internally in electronic form.⁶⁰

General considerations

⁶⁰ ICPM-7 (2005), Appendix II.

5. CONTENT OF THE ISPMS AND STANDARD SETTING DOCUMENTS

5.1 Recommendations on use of supplements, annexes and appendixes in ISPMs

Criteria for the formation, content and subsequent change of supplements, annexes and appendixes in ISPMs were adopted by the CPM-1 (2006).⁶¹

1. Criteria for the formation, content and subsequent change of supplements

- A supplement is an official part of a standard (prescriptive) and this should be stated in the header.
- Supplements are the mechanism that the CPM uses in certain situations to add conceptual information that is supplemental to a standard and that provides additional text without changing existing text. This is different from amendments or revisions to a standard.
- Supplements to an ISPM are numbered sequentially with Arabic numerals.
- Supplements are the first component document to follow the body of the standard.
- Glossary (ISPM 5) supplements are used to clarify and explain complex phytosanitary terms and definitions which cannot be understood from a normal concise definition.
- Text from supplements may be integrated into the standard according to the decision of the CPM. In this case, the integrated text should be clearly indicated by a symbol or other means, and the standard should carry the date of adoption of the supplement by the CPM.
- Glossary supplements are attached to the end of the section containing terms and definitions, and are numbered sequentially with Arabic numbers in the order of adoption of the supplement by the CPM.
- The date of adoption by the CPM should be indicated in the amended or revised supplement.

Annexes

2. Criteria for the formation, content and subsequent change of annexes

- An annex is an official part of a standard (prescriptive) and this should be stated in the header. An annex adds technical information to the standard. It is referred to in the main text of the standard.
- Annexes to an ISPM are numbered sequentially with Arabic numerals.
- Annexes follow the body of the standard and follow supplements, if present.
- Information in annexes does not affect the principles incorporated in the primary standard. They do not normally include conceptual information of relevance to the standard.
- Annexes may provide technical guidelines for phytosanitary treatments or procedures, including treatments, treatment schedules and diagnostic protocols. They may include tables and figures.
- Annexes may contain information that may need to be amended or revised to ensure that the specific information provided is consistent with and reflects current scientific knowledge and other relevant information. The circumstances under which amendments and revisions become necessary may include:
 - - the approval of new guidelines, treatments or procedures
 - - a change in existing methods
 - - as a result of experiences with implementation of a particular standard.
- New annexes or amendments and revisions to existing annexes may be proposed following the *Procedures for identifying topics and priorities for standards* (Report of ICPM-4, 2002, Appendix XIV). (See also [ANNEX 3](#))
- Amendment or revision of annexes may be made without modifying the standard.

⁶¹ CPM-1 (2006), Appendix XIII, 1-2.

- The date of adoption by the CPM should be indicated in the amended or revised annex.

Recommendations on the use of annexes⁶²

Technical annexes (such as treatment schedules, e.g. wood packaging) should be used as much as possible, where appropriate. Annexes should be open to revision separately to the main standard. Revision of annexes could be by a fast track procedure special process.

Annexes should only contain highly specific information that may need to be changed over time and that does not affect the principles incorporated in the primary standard.

3. Criteria for the formation, content and subsequent change of appendices

- Appendices are not official parts of standards (for information only, not prescriptive) and this should be stated in the header.
- Appendices to an ISPM are numbered sequentially with Arabic numerals.
- Appendices should be the last component document in a standard.
- Appendices provide references or further information relevant to the standard.
- The date of adoption by the CPM should be indicated in the amended or revised appendix.

5.2 Adding or changing information in an ISPM and component documents

There are several ways to add or change information in an ISPM (supplements, annexes and appendixes)⁶³. ISPMs may be:

- amended
- revised or
- have supplements, annexes and/or appendixes added to them.

Supplements, annexes and appendixes may be:

- amended or
- revised or
- eliminated.

In general, a revision affects the entire document whereas an amendment affects a specific part or parts of the document.

5.3 Administrative guidelines for the structure of standard setting documentation

For guidance on use, types, format and style of standards, refer to the [IPPC Style Guide](#).⁶⁴

⁶² ICPM-6 (2004), Appendix IX, 8.

⁶³ CPM-1 (2006), Appendix XIII, 1-2.

⁶⁴ The IPPC Style Guide is available at: <https://www.ippc.int/publications/ippc-style-guide>.

5.4 General recommendations on consistency

General recommendations on consistency, approved by the Technical Panel for the Glossary (TPG) and noted by the SC⁶⁵, are given in 8.6, and are to be used when drafting ISPMs. In addition, the SC (May 2011) noted that the general recommendations on consistency will be regularly reviewed and consolidated by the TPG.

The SC (May 2013) encouraged the implementation of those recommendations by expert drafting groups and others directly involved in drafting ISPMs.

5.5 Categories of IPPC related documents

See [ANNEX 4](#) for a categorization of all IPPC related documents, including explanatory documents, which also describes the clearances required for all documents under the IPPC framework.

Explanatory documents

The ICPM-6 (2004) noted that there is a demand for explanatory documents, manuals and similar documents to help countries implement provisions of the IPPC and ISPMs. They are developed and distributed under the auspices of the Secretariat.

These documents are developed or reviewed by experts before publication. The SC provides comments and approval via SC e-decisions. The documents are published under the name of the author with a clear disclaimer that they cannot be taken as an official legal interpretation of the IPPC or its related documents, and are produced for public information purposes only.

Further detailed information and a list of current Explanatory documents are contained in [ANNEX 5](#).

The SC *agreed* that the explanatory document on ISPM 5 (“annotated glossary”) should remain under the auspices of the TPG, be updated when the TPG identifies the need, and that a revision should be published every three years; *agreed* that the explanatory document on ISPM 15 should be directly managed under the auspices of the Technical Panel on Forest Quarantine (TPFQ) [...]; *agreed* to continue with the present system of the production of explanatory documents with increased input from SC members and the relevant stewards identifying authors for these papers, with minimal Secretariat involvement.⁶⁶

Position papers

These are documents prepared to clarify for instance a panel’s position on a subject matter. They serve to outline the references and sources that the panel bases its decisions on, in order to appropriately understand how the decisions were taken and how the specific position was reached.

The SC in its May 2014 meeting agreed that TP position papers be posted publically after they are approved by the SC.⁶⁷

⁶⁵ TPG 2013-02 and SC 2013-05.

⁶⁶ SC 2013-05, paragraph 54.

⁶⁷ SC 2014-05, paragraph 150.

6. STANDARDS COMMITTEE

The First session of the CPM (CPM-1, 2006) established the Standards Committee (SC) as its subsidiary body on standard setting⁶⁸. The SC is composed of 25 members drawn from the seven FAO regions (Africa, Asia, Europe, Latin America & Caribbean, Near East, North America, and Southwest Pacific). Each region determines its own procedures to select nominees for the SC. Figure 9 exemplifies the process.

The SC selects from within its members a subgroup of seven experts, the SC Working Group of seven members (SC-7), to undertake detailed work on draft standards.

The SC should consult with external experts on technical subjects as needed.⁶⁹

The SC's role is to address standard setting and the feasibility of implementation.⁷⁰

6.1 Functions of the Standards Committee Chairperson, Vice-Chairperson and Rapporteur (in session and inter-sessionally)⁷¹

The SC has agreed on the functions of the SC Chairperson, Vice-Chairperson and Rapporteur.

Chairperson

The Chairperson of the SC is elected in accordance with the [Terms of Reference](#) and [Rules of Procedure for the SC](#). The main functions of the Chairperson are to:

- manage the SC during meetings and inter-sessionally
- provide guidance on the affairs of the SC
- help ensure participation of SC members and facilitate dialogue and understanding among SC members
- help the Secretariat to prepare the agenda and report of the meetings
- represent the SC at IPPC meetings
- upon request by the Secretariat, represent the Secretariat at other meetings
- assist the Secretariat to liaise with technical panels to identify and resolve overlaps in their work programmes and functions
- report to the Commission on SC activities and provide the SC with guidance on how to implement Commission decisions
- finalize decisions taken via electronic means and address cases of lack of consensus during SC discussions via electronic means.

Vice-Chairperson

The Vice-Chairperson of the SC is elected in accordance with the [Terms of Reference](#) and [Rules of Procedure for the SC](#). The main function of the Vice-Chairperson is to assist and replace the SC Chairperson as necessary.

⁶⁸ CPM-1 (2006) paragraph 20.1. The SC had been established by the ICPM-4 (2002) to replace the former Interim Standards Committee and its predecessor, the Committee of Experts on Phytosanitary Measures (CEPM).

⁶⁹ Adopted by CPM-7 (2012), Appendix 4 (Decision 23).

⁷⁰ Decided by the Bureau June 2012 (section 6.8), noted by SC November 2012 (agenda item 3.1.3).

⁷¹ SC 2008-11, Appendix 3.

Rapporteur

The Rapporteur of an SC meeting is elected by the SC members participating in that meeting. The main functions of the Rapporteur are to:

- ensure that the report prepared by the Secretariat is an accurate record of the discussions and decisions of the meeting
- assist the Secretariat in drafting, reviewing and finalizing the SC meeting report
- facilitate the SC e-mail discussions in relation to points of the SC reports.

6.2 Terms of Reference for the Standards Committee⁷²

(1) Scope

The SC manages the standard-setting process and assists in the development of International Standards for Phytosanitary Measures (ISPMs) which have been identified by the Commission as priority standards.

(2) Objective

The main objective of the SC is to prepare draft ISPMs according to the standard-setting procedures in the most expeditious manner for adoption by the Commission.

(3) Structure of the Standards Committee

The SC consists of 25 members drawn from each of the FAO regions. The distribution for each region will be:

- Africa (4 members)
- Asia (4)
- Europe (4)
- Latin America and the Caribbean (4)
- Near East (4)
- North America (2)
- Southwest Pacific (3)

Temporary or permanent working groups, and drafting groups consisting of SC members, may be established by the SC as required. SC working groups are selected by the SC from its membership.

Seven SC members are selected by the SC to form the SC-7 and are guided by the terms of reference and rules of procedure for this group which are approved by the SC.

The functions and working procedures of the SC-7 and other SC working groups are determined by the SC.

(4) Functions of the Standards Committee

The SC serves as a forum for:

- examination and approval or amendment of specifications
- review of specifications
- designation of members of SC working groups and identification of tasks of the groups
- establishment and disestablishment of expert working groups and SC working groups as appropriate
- approval of the work programmes of technical panels, and review, guidance and supervision of their activities and outcomes of their meetings

⁷² Adopted by the CPM-1 (2006) and aligned by the SC 2008-11, Appendix 4, as requested by the CPM-3 (2008).

- selection of membership of expert drafting groups as required and in accordance with the appropriate terms of reference and/or rules of procedure for these groups
- review of draft ISPMs
- approval of draft standards to be submitted to contracting parties, RPPOs, relevant international organizations, national plant protection services of non-contracting parties, and other entities as decided by the SC, under the consultation procedure
- establishment of open-ended discussion groups where appropriate
- revision of draft ISPMs in cooperation with the IPPC Secretariat taking into account comments of contracting parties, RPPOs, relevant international organizations, national plant protection services of non-contracting parties, and other entities as decided by the SC
- approval of final drafts of ISPMs for submission to the Commission
- review of existing ISPMs and identification and review of those requiring reconsideration
- identification of priorities for ISPMs under development
- ensuring that language used in draft ISPMs is clear, simple and focused
- assigning stewardship for each ISPM
- other functions related to standard setting as directed by the Commission.

These functions may be executed during face-to-face meetings and between meetings, via electronic means, as determined by the SC.⁷³

(5) IPPC Secretariat

The Secretariat provides administrative, technical and editorial support as required by the SC. The Secretariat is responsible for reporting and record keeping regarding the standard-setting programme.

6.3 SC terminology

Many SC recommendations will be directed at the CPM. In that context, in the CPM Bureau meeting, March 2015, FAO Legal Services explained the differences between “endorse, adopt and approve” as following:

The main difference is in the ownership of the product. *Endorse* means to support someone else’s instrument, which remains the instrument of that person, i.e. ownership is not transferred. When a body *adopts* an instrument, the instrument becomes the ownership of that body. It is the term used for high level instruments. *Approve* is a middle ground, and may be used in lieu of *adopt* depending on the level of the instrument.

As examples, it was noted that: Standards are adopted; trust fund budgets are adopted or approved; programmes are adopted or approved; work plans are adopted or approved; trust fund financial report is noted (as done by others); procedures are adopted; recommendations are adopted; activities are endorsed.⁷⁴

⁷³ The SC (2008) discussed issues related to electronic communication for SC business. The issues include selection of experts, approval of explanatory documents, finalizing specifications, adjustment of stewards and deciding on other tasks as appropriate. The SC discussed what type of work could be handled electronically outside of the meeting. The SC considered that development of specifications via electronic means could be done partially through electronic means, but that discussion in the SC is also valuable. The length of time for responses was changed from two weeks as previously agreed to three weeks. The SC agreed to these new procedures (SC 2008-11, Appendix 4).

⁷⁴ Bureau 2014-03, Section 5.

Interpretation during SC meetings

CPM agreed that the need to have interpretation into any specific FAO language should be expressed by a request of a Standards Committee member to the IPPC Secretariat in writing (with confirmation) and no less than 90 days before the meeting of the Standards Committee.⁷⁵

⁷⁵ CPM-6 (2011).

6.4 Rules of Procedure for the Standards Committee⁷⁶

In order to be appointed as an SC member, the nominee must sign a Statement of Commitment form (available in [ANNEX 6](#)).

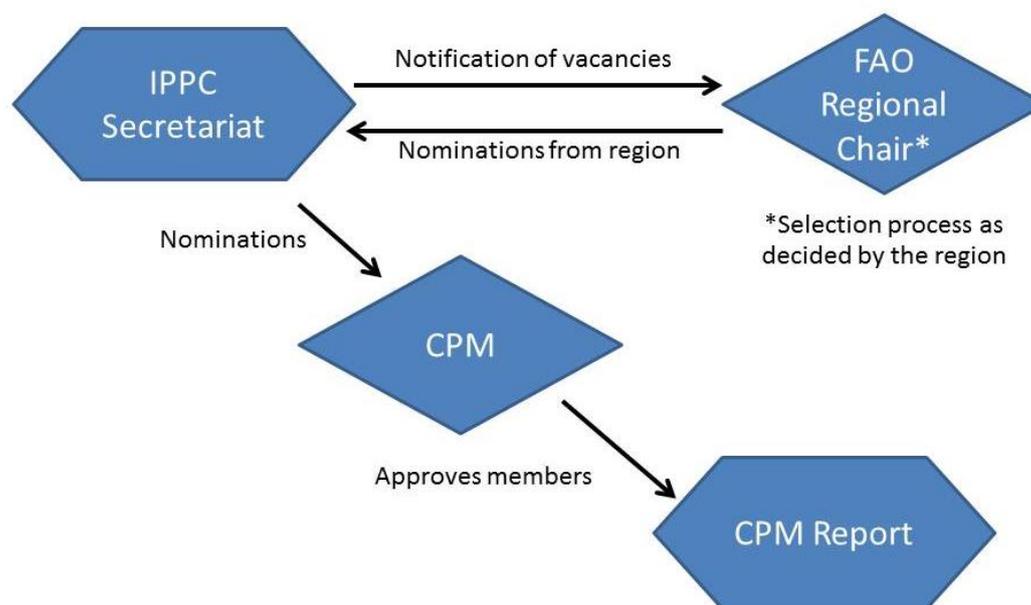


Figure 9: The processes of nomination of members to subsidiary bodies (including the SC)

The CPM should allow, and the regions should encourage, staggering the terms of SC membership to ensure continuity of expertise. The SC should also consider this same principle for other groups working under the SC⁷⁷.

Rule 1. Membership

Members should be senior officials of national plant protection organizations (NPPO), designated by contracting parties, and have qualifications in a scientific biological discipline (or equivalent) in plant protection, and experience and skills particularly in the:

- practical operation of a national or international phytosanitary system
- administration of a national or international phytosanitary system, and
- application of phytosanitary measures related to international trade.

Contracting parties agree that SC members dedicate the necessary time to participate in a regular and systematic way in the meetings.

Each FAO region may devise its own procedures for selecting its members of the SC. The IPPC Secretariat is notified of the selections that are submitted to the CPM for confirmation.

The SC is responsible for selecting the SC-7 members from within its membership. Members selected for the SC-7 will meet the above-mentioned qualifications and experience.

⁷⁶ Adopted by the CPM-1 (2006); aligned by the SC 2008-11 (Appendix 4), as requested by the CPM-3 (2008); revised by SC 2012-11 and adopted by CPM-8 (2013), Appendix 3; Rule 6 of the Rules of Procedure amended by CPM-11 (2016).

⁷⁷ Adopted by CPM-7 (2012), Appendix 4 (Decision 21).

Rule 2. Replacement of members

Each FAO region shall, following its own procedures, nominate potential replacements for members of the SC and submit them to the CPM for confirmation. Once confirmed, potential replacements are valid for the same periods of time as specified in Rule 3. These potential replacements should meet the qualifications for membership set forth in these Rules. Each FAO region shall identify a maximum of two potential replacements. Where a region nominates two, it should indicate the order in which they would serve as replacements under this Rule.

A member of the SC will be replaced by a confirmed potential replacement from within the same region if the member resigns, no longer meets the qualifications for membership set forth in these Rules, or fails to attend two consecutive meetings of the SC.

The national IPPC contact point should communicate to the Secretariat any circumstances where a member from its country needs to be replaced. The Secretariat should inform the relevant FAO regional chair.

A replacement will serve through the completion of the term of the original member, and may be nominated to serve additional terms.

Rule 3. Period of membership

Members of the SC shall serve for terms of three years. Members may serve no more than two terms, unless a region submits a request to the CPM for an exemption to allow a member from within its region to serve an additional term. In that case, the member may serve an additional term. Regions may submit requests for additional exemptions for the same member on a term-by-term basis. Partial terms served by replacements shall not be counted as a term under these Rules.

The CPM-8 (2013) agreed that SC members' terms would end after the SC-7 meeting.⁷⁸

Rule 4. Chairperson

The Chairperson and Vice-Chairperson of the SC are elected by the SC from its membership and serve for three years, with a possibility of re-election for one additional term of three years. The Chairperson and Vice-Chairperson may serve in these capacities only when a member of the SC. The Chairperson, or in the absence of the Chairperson, the Vice-Chairperson, shall preside at meetings of the SC and shall exercise such other functions as may be required to facilitate the work of the SC. A Vice-Chairperson acting as a Chairperson shall have the same powers and duties as the Chairperson.

The Chairperson shall direct the discussions in SC meetings, and at such meetings ensure observance of these Rules, accord the right to speak, put questions and announce decisions. He/she shall rule on points of order and, subject to these Rules, shall have complete control over the proceedings at any meetings. He/she may, in the course of the discussion of an item, propose to the SC the limitation of the time to be allowed to speakers, the number of times each member may speak on any question, the closure of the list of speakers, the suspension or adjournment of the meeting, or the adjournment or closure of the debate on the item under discussion. The Chairperson, in the exercise of his/her functions, remains under the authority of the SC.

Rule 5. Sessions

Meetings of the SC are normally held at FAO Headquarters in Rome. The SC meets at least once per year.

Depending on the workload and resources available, the SC or the Secretariat, in consultation with the Bureau of the CPM, may request additional meetings of the SC. In particular, the SC may need to meet after the CPM meeting in order to prepare draft standards for consultation.

⁷⁸ CPM-8 (2013) report, paragraph 201.4.

Depending on the workload and resources available, the SC, in consultation with the Secretariat and the Bureau of the CPM, may authorize the SC-7 or extraordinary working groups of the SC to meet.

A session of the SC shall not be declared open unless there is a quorum. The presence of a majority of the members of the SC is necessary to constitute a quorum.

Some tasks, as agreed by the SC, may be undertaken between meetings via electronic means, and should be reported on in the report of the next session of the SC.

Rule 6. Approval

Approvals relating to specifications or draft standards are sought by consensus. Final drafts of ISPMs which have been approved by the SC are submitted to the CPM without undue delay.⁷⁹

Situations where consensus is required but cannot be reached shall be described in the meeting reports detailing all positions maintained and presented to the CPM for discussion and appropriate action.

Rule 7. Observers

A contracting party to the IPPC or any regional plant protection organization may request to send one observer to attend an SC meeting. This request should be communicated by the official IPPC contact point to the Standards Officer thirty days prior to the starting date of the meeting. In response to this request, the observer will be invited to attend, depending whether logistical arrangements can be made. Such observers may i) participate in the discussions, subject to the approval of the Chairperson and without the right to vote; ii) receive the documents other than those of a restricted nature, and; iii) submit written statements on particular items of the agenda.⁸⁰

Rule 8. Reports

SC meeting records shall be kept by the Secretariat. The report of the meetings shall include:

- approval of draft specifications for ISPMs
- finalization of specifications with a detailed explanation including reasons for changes
- reasons why a draft standard has not been approved
- a generic summary of SC reactions to classes of comments made in consultation
- draft standards that are sent for consultation and draft standards recommended for adoption by the CPM.

The Secretariat shall endeavour to provide to CPM Members upon request the rationale of the SC for accepting or not accepting proposals for modifications to specifications or draft standards.

A report on the activities of the SC shall be made by the Chairperson of the SC to the annual session of the CPM.

Reports of SC meetings shall be adopted by the SC before they are made available to Members of the CPM and RPPOs.

Rule 9. Language

The business of the SC shall be conducted in the languages of the organization.

⁷⁹ IPPC Secretariat added underline for emphasis. FAO legal services during SC-7 plus meeting, May 2015, advised that for all other types of decisions, the CPM rules V and VI would apply.

⁸⁰ SC 2013-11 “*recognized* the value of the participation of relevant international organizations in the Standard setting process, but noted that this should be achieved through direct participation during consultation periods or their national members via their NPPO and, when appropriate, by nominating experts for an expert working group” (Paragraph 26).

Rule 10. Amendments

Amendments to the Rules of Procedures and the Terms of Reference may be promulgated by the CPM as required.

6.5 Guidelines on the duties of members of the Standards Committee

The SC approved these guidelines in November 2006, noting that, where necessary, the guidelines can be modified using the SC's normal procedures.⁸¹

SC and SC-7 members should seek technical advice from experts in advance of meetings, including from technical panel members, to prepare appropriately. This facilitates the timely development of ISPMs.

Purpose of the Standards Committee

The SC is an integral component of the Standard setting process with the purpose of assisting the production of draft standards that are of sufficient quality to be adopted by the Commission as International Standards for Phytosanitary Measures (ISPMs). The SC does not write standards but prepares draft ISPMs according to the Standard setting procedures, monitors each standard's development and ensures they have a consistent quality. The SC may also be assigned additional tasks by the Commission.

The SC ensures that the standards:

- fulfill the specification for the standard
- fall within the scope of the IPPC
- are technically based
- have scientific integrity
- follow the principles and policies of the Commission, including the General considerations for standard setting
- are presented in the required format for standards
- are written in a simple, clear and focused language.

The Commission has decided that the SC should be made up of experts from different regions. The Commission intends that the committee include a diversity of global views on any subject it deals with. These views are used in the production of internationally harmonised standards. They encompass, for example, the views of different geographic regions of the world, developing and developed countries, tropical and temperate regions, continental and island nations, highly and sparsely populated countries, countries with intensive agricultural or forestry interests etc. The choice of experts on a regional basis is a pragmatic choice to obtain a range of views that can produce internationally acceptable standards.

The primary purpose of the SC is to ensure that ISPMs help to protect plant health on a global scale. The SC members that are selected are expected to act as individual experts, not as country representatives. However, the views of the expert are usually those characteristic of the region the expert comes from.

In addition to assisting with the development of standards, the SC serves as a forum for other functions as directed by the Commission. These types of functions could include the review of procedural and administrative documents to ensure they are consistent with the Standard setting process and are feasible.

Structure of the SC

The membership of the SC is outlined in the [Terms of Reference](#) and [Rules of Procedure for the SC](#). The whole body is referred to as the SC and this body selects its own Chairperson and Vice-Chairperson. In addition, the SC members from each FAO region select a member to form the SC-7 who, in turn, select their own Chairperson. The SC oversees the work of expert drafting groups in particular through the use of specifications. The SC may decide to break into smaller working groups

⁸¹ SC 2006-11, paragraph 104; modified by the SC 2008-11, Appendix 5.

as necessary in order to deal with a heavy workload, maintaining the diversity of global views. Holding additional meetings of the SC should be done in consultation with the Commission Bureau and IPPC Secretariat. The Commission establishes the [Terms of Reference](#) and [Rules of Procedure for the SC](#), and the SC determines the working procedures of the SC working groups.

Decision making

The SC is responsible to collectively make decisions presented for consideration to the Commission. These are recorded in the report of the SC. The SC may agree to use electronic means for consultation on specific issues between meetings. The views of the SC members collected at SC meetings and recorded in SC reports on these issues should be taken into consideration. Some decisions, such as those outlined in the IPPC Standard setting procedure, may be taken between sessions by e-mail without prior agreement.

6.6 Duties and associated tasks of SC members⁸²

During the Standard setting process, SC members have a number of duties directly concerned with draft standards by virtue of their membership of the SC. These duties are listed in point A below. Normally, however, SC members also undertake any one or several of a number of other roles within the standard drafting procedure. The duties of these roles are described in points D and E below. The other duties of SC members are listed in the following sections.

A. Basic duties directly related to the evaluation of draft standards

The basic duties of the SC member include:

- Examination of draft standards from expert drafting groups. Prior to the meeting, the SC member reads the drafts, considers the reports of expert drafting groups and prepares comments. The SC member presents any comments or changes to the draft to the SC meeting, usually held in May.
- Examination of comments on draft standards after consultation. The SC member reviews the comments (except those relating to editing and translation), discusses them with the SC and proposes appropriate changes to the draft.
- Making of consequential proposals to:
 - send draft standards for consultation
 - approve standards and recommend them to the Commission for adoption
 - initiate a further round of consultation
 - send drafts back for redrafting by the steward or an expert drafting group.

B. Time requirements

The participation as a SC member may involve a considerable time input. The estimate of this time input would be, as a minimum:

- 3–4 weeks for meetings (depending on involvement in the SC-7 and travel distance)
- 2 weeks to review draft standards
- 2 weeks to review comments.

This may be increased if the SC member participates in regional workshops on draft standards and/or is a steward of an ISPM(s).

SC members should have the required time available to participate in SC meetings. In addition to this time commitment, member governments should ensure that their members can attend SC meetings.

C. Regional communication

SC members are requested, where possible, to assist with the communication of information regarding the draft standards to countries within their region. This could be done by discussing the issues with other regional experts, attending regional workshops on draft standards, or contributing to supplementary written information on the draft standards. SC members should also respond to concerned official contact points about comments that were not incorporated into draft ISPMs.

SC members also inform experts nominated for expert drafting groups from their region if they were not selected.

If a region considers it valuable, the region should be encouraged to assign one or more members of the SC from its region to help play a lead role in facilitating the communication between the SC and NPPO and RPPO within their region.⁸³

⁸² SC 2006-11, Paragraph 104, modified by the SC 2008-11, Appendix 5.

⁸³ Adopted by CPM-7 (2012), Appendix 4 (Decision 18).

D. Duties of SC members in an expert drafting group when they are not a steward

The Commission recommends that each expert drafting group have one SC member within the group. The SC member can be a basic member of the group (see [Guidelines for the operation of expert working groups](#)) or can be a steward (see [Duties and associated tasks of SC members](#) and [Guidelines on the role of lead and assistant stewards](#)). The SC member may assist with the expert drafting group more than an ordinary member because of their experience. The duties of a SC member of the expert drafting group who is not a steward may include:

- Prior to the meeting of the expert drafting group:
 - assist with the arrangements for the meeting
 - offer their advice to others organizing the meeting.
- During the expert drafting group meeting:
 - explain the Standard setting process, if necessary
 - act as the Chairperson or rapporteur if required
 - participate as an expert
 - assist the steward as required.
- At the SC meeting:
 - act as a backup to the steward to explain the draft standard and the main discussion points during the expert drafting group meeting.
 - frequently, the SC member is the steward for the standard.

E. Duties of SC members in an expert drafting group when they are a steward

It is intended that most expert drafting groups will have a steward that is a SC member. The functions of a steward are described in detail in [Guidelines for the role of a steward of an ISPM](#). A brief summary of these duties are:

- participate in the selection of experts
- explain the Standard setting process and the specifications to the expert drafting group
- assist in the development of discussion papers
- assist the Secretariat in the organization and running of the meeting
- explain the main points of the draft standard to the SC and answer questions
- assist in the analysis of comments.

F. Examination of specifications for standards

The SC member carefully reviews the specifications for standards that are prepared by, or under the auspices of, the Secretariat.

The SC member reviews the specifications by:

- discussing to ensure the specifications will produce a globally acceptable standard
- ensuring the specifications accurately describe the title and the scope and purpose of the intended standard
- ensuring the tasks and other elements of the specifications are correctly identified
- proposing modifications if necessary
- assisting in the analysis of comments.

G. The examination of procedural and administrative documents

The Commission adopts procedural and administrative documents (e.g. terms of reference and rules of procedure of various groups). These are reviewed by the SC to ensure they are consistent with the

Standard setting process and feasible. They are then amended if necessary and forwarded to the Commission.

H. Other administrative duties

These include:

- approval of the membership of expert drafting groups
- approval of stewards for expert drafting groups
- approval of subjects for specific standards as proposed by technical panels
- establishment of open-ended discussion groups
- review of priorities for ISPMs proposed by the SPG (formerly SPTA) with the opportunity to add other priorities
- undertaking of other duties as requested by the Commission.

6.7 Guidelines on the role of lead and assistant steward(s)

The first guidelines on the role of a steward were drafted⁸⁴ in response to recommendations from ICPM-6 (2004) on an expanded role of stewards: “They should be invited to relevant SC meeting to assist the work of the SC on the standard that the steward is responsible for and that the Secretariat should supply editorial expertise to assist stewards in carrying out their role”.⁸⁵

These guidelines were revised in response to changes in the responsibilities of stewards based on the new Standard setting process adopted at CPM-7 (2012) and the decision to encourage the SC to assign a lead steward and one or two assistant stewards for each topic.⁸⁶

A. Selection of lead and assistant steward(s)

Lead stewards are senior plant health officers or scientists who are familiar with the IPPC Standard setting process. Proposed lead stewards should recognize that considerable time may be required. Stewards should be Standards Committee (SC) members or a former SC member or, for Technical Panels (TPs), a TP member could also be considered.

Assistant stewards should also be senior plant health officers or scientists who are familiar with the IPPC Standard setting process. Proposed assistant stewards should recognize that considerable time may be required. More than one assistant steward may be assigned. These assistants may be from outside the SC such as potential replacement members, former SC members, technical panel members or expert working group members.

For Technical Panels, the SC should endeavour to select replacement stewards in time to allow for overlap at one meeting with the outgoing steward.

B. Role of the lead steward

The role of the lead steward is to oversee a TP or an Expert Working Group (EWG) and lead the development of the associated draft standard(s), from the moment the lead steward is assigned to the adoption the standard. The lead steward is the SC representative and has the responsibility to liaise between the expert drafting group and the SC. The functions of a lead steward vary according to the nature and complexity of the TP or draft standard and the requirements stated in the specification. The lead steward should assist the Secretariat to ensure that the expert drafting group follows the IPPC Standard setting process.

The lead steward is expected to attend the EWG or TP meeting when the draft ISPM is first discussed. The lead steward is invited to meetings where draft specification or draft ISPM will be discussed (i.e. SC, SC-7, EWG, TP and CPM⁸⁷ meetings). At meetings when the lead steward is not a member, but the draft specification or draft ISPM will be discussed, and if the steward’s participation is deemed necessary by the SC or IPPC Secretariat, funding will be based on the *IPPC Criteria for funding*. If attending the meeting is not possible, the lead steward should consider attending virtually or request the assistant steward attend in his or her place.

The lead steward may seek assistance from the assistant steward with any of the following responsibilities.

⁸⁴ Approved SC 2006-11, Paragraph 104, revised SC 2008-11.

⁸⁵ ICPM-6 (2004), Appendix IX, Paragraph 5.

⁸⁶ Approved by SC 2013-11 (Appendix 5).

⁸⁷ Note that the lead steward is not required to attend the CPM meeting when the draft ISPM is presented for adoption because no discussion is expected to take place.

Time commitment

The estimated time requirements for the involvement of a lead steward in a single standard is at least eight weeks, including, but not limited to, the following activities:

- reading documents;
- revising the draft specification;
- developing discussion papers;
- attending expert drafting group meetings;
- preparing a presentation for regional workshops on the IPPC;
- responding to comments and revising the draft ISPM;
- attending SC or SC-7 meetings and briefing SC members as appropriate.

Contracting parties (and the regional plant protection organizations (RPPOs) they are members of) are encouraged to support the production of standards by supporting the work of lead stewards whenever possible.

Upon request of the lead steward, the Secretariat will communicate to the FAO representative of the steward's respective country the responsibilities and time needed for the stewardship.

C. Role of the assistant steward(s)

The role of the assistant steward is to assist the lead steward in his or her responsibilities on all aspects of draft ISPM development as described in these guidelines as requested by the lead steward.

The assistant steward is not expected to attend meetings. However, if, at any time, the lead steward is not able to attend a meeting or if he/she is no longer available, the assistant steward may be asked to undertake the lead steward role during a meeting.

The assistant steward should provide written comments, if any, at appropriate times to assist the lead steward in the Standard setting process (e.g. ideas for inclusion in the draft standard should be submitted prior to meeting of the drafting group).

The SC reviews the assignment of lead and assistant stewards and may decide that an assistant steward should become the lead steward.

Communication will normally be by e-mail, conference calls or e-decisions or other virtual means and the assistant steward should have access to all documents related to the EWG or TP that he/she is assigned. The assistant steward may also be invited to participate in drafting group meetings virtually if possible.

D. Responsibilities, duties and tasks of the lead steward

Developing the draft specification

A draft specification and literature review must be included with each topic submission. The SC should endeavour to submit draft specifications for consultation immediately after new topics have been added to the List of topics for IPPC standards by the CPM. In cases where the specification is considered by the SC to require revision, the lead steward is responsible for revising the specification.

Responding to comments on a specification or draft standard

The lead steward should review comments according to the following:

- Sufficient time should be allocated when reviewing comments.
- Lead stewards must respond to all English-language comments. It is the decision of the lead steward to respond to comments in languages other than English.
- The following terminology should be used when responding to comments and the terms should be entered at the beginning of each stewards response:

- **INCORPORATED:** for comments that have been incorporated exactly as written.
 - **MODIFIED:** for comments that have been incorporated, but not exactly as written. When a comment has been or incorporated not exactly as written, the steward's response should provide the reasoning for this decision and be brought to the attention of the SC or SC-7.
 - **CONSIDERED BUT NOT INCORPORATED:** for comments that have not been incorporated. When a comment has been considered but not been incorporated, the steward's response should provide the reasoning for this decision and be brought to the attention of the SC or SC-7.⁸⁸
 - **FOR CONSIDERATION BY SC or SC-7:** for comments that require consideration or review by the SC or SC-7. This term also should be used to indicate a comment that was incorporated, but should be brought to the attention of the SC or SC-7.
- Every comment must receive a steward's or TP's response.
 - To assist the SC or SC-7, the lead steward may prepare a list of the comments that require SC or SC-7 review. This list should identify (by comment number) every comment that has been identified as **CONSIDERED** and **FOR CONSIDERATION BY SC or SC-7**.
 - Responses to comments on draft ISPMs (other than diagnostic protocols (DPs) and phytosanitary treatments (PTs)) are developed by the lead steward who also revises the draft ISPM accordingly and submits the steward's response to the Secretariat. TP or EWG members could be consulted as needed.
 - For DPs and PTs, responses to comments on draft ISPMs and the revised draft ISPM are developed by the TP lead, in consultation with the lead steward. They must be approved by the panel and submitted by the lead steward to the Secretariat as the TP's responses to comments.
 - The lead steward should also consider and incorporate editorial comments as appropriate.

Prior to the EWG or TP meeting

The lead steward may be asked to:

- provide guidance to the Secretariat and SC in relation to the selection of experts for the EWG or TP;
- liaise with the Secretariat to ensure that discussion papers are produced for the required meeting.

The lead steward may also prepare a draft standard prior to the EWG or TP meeting. This draft standard should be submitted by the lead steward to the Secretariat at least six weeks before the EWG or TP meeting, to allow sufficient analysis and review by all meeting participants.

During the EWG or TP meeting

The lead steward is expected to:

- explain the Standard setting process;
- explain the requirements of the specification to the participants and have a good understanding of the history, background, important discussion points and previous decisions on the specification and topic for the standard. If some issues are unclear, the lead steward should discuss the matters with the Secretariat, Assistant steward or members of the SC;
- assist the Secretariat in revising the draft standard;
- assist the Secretariat in drafting the meeting report.

After the EWG or TP meeting, the lead steward is responsible for reviewing the meeting report. The lead steward should submit the draft standard to the Secretariat by the due date determined by the

⁸⁸ 2015-09 the IPPC Secretariat added "but not incorporated" to clarify that "considered" means that the comment was not incorporated.

Secretariat for review at the May SC meeting. If a draft ISPM is presented to the November SC meeting, the deadlines will be established by the Secretariat.

At the meeting when the SC approves the draft ISPM for the first consultation

If not an SC member, the lead steward should be invited to attend the SC meeting. The lead steward is expected to give a verbal summary of the draft standard to date, such as the history, background, important discussion points and previous decisions on the specification and topic for the standard, and the outcomes of the EWG or TP meeting at which the draft standard was drafted. If the lead steward cannot attend the meeting, he/she should provide documentation about the standard and consider attending virtually, request the assistant steward attend in his or her place or brief an SC member.

When the SC does not approve the draft standard for the first consultation and returns it to the lead steward, the lead steward should consider all comments received during the meeting and revise the draft standard. The lead steward should re-submit the draft standard to the Secretariat the due date determined by the Secretariat for review at the next SC meeting.

Before regional workshops on the IPPC

Lead stewards should prepare a presentation on the draft standard and submit it to the Secretariat by 15 June. Attendance is not required at regional workshops and any travel costs would be incurred by the lead steward's NPPO or RPPO.

Prior to the SC-7 meeting

See also the section above on responding to comments.

The steward's responses to comments, the revised draft ISPM and the steward's summary should be submitted to the Secretariat by 1 February.

If not an SC-7 member, the lead steward should be invited to attend the relevant sessions of SC-7 meeting when the draft standard will be discussed. If attending the meeting is not possible, the lead steward should provide documentation to assist with the discussion on the comments and consider attending virtually, request the assistant steward attend in his or her place or brief an SC member. When the SC-7 does not recommend the draft standard to the SC and returns it to the lead steward, the lead steward should consider all comments received during the meeting and revise the draft standard. The lead steward should submit the draft standard to the Secretariat the due date determined by the Secretariat for review at the next SC meeting.

After the second (or more) consultation period closes

See also the section above on responding to comments.

The lead steward reviews and responds to the comments and revises the draft ISPM. Then, the lead steward submits the steward's responses to comments, the revised draft ISPM and the steward's summary to the Secretariat at least two weeks prior to the SC meeting when the SC recommends the draft ISPM to the CPM for adoption.

At the meeting when the SC recommends the draft ISPM to the CPM for adoption

If not an SC member, the lead steward may be invited to attend the SC meeting. If attending the meeting is not possible, the lead steward should consider attending virtually or request the assistant steward attend in his or her place.

When the SC does not recommend the draft standard to the CPM for adoption and returns it to the lead steward, the lead steward should consider all comments received during the meeting and revise the draft standard. The lead steward should submit the draft standard to the Secretariat the due date determined by the Secretariat for review at the next SC meeting.

At the meeting when the CPM adopts the ISPM

Attendance is not required at CPM and any travel costs would be incurred by the lead steward's NPPO or RPPO.

6.8 E-decisions: IPPC SC procedures for conducting discussions and making decisions by electronic means⁸⁹

Initiation of electronic discussion and decision-making

Issues for electronic communication do not need to be first identified at a face-to-face meeting of the SC.

To initiate a discussion via electronic means, an SC member may submit the proposed topic and a proposed timeline for discussion to the Secretariat. In consultation with the SC Chairperson, the Secretariat communicates the topic for discussion and the timeline to the SC. If a decision is needed as a result of the discussion, the SC Chairperson will provide a summary of the discussion and a proposed decision to the SC to be taken.

Types of discussion and decisions that the SC can make by electronic means

The types of discussions and decisions listed below may be made through the use of electronic communication:

- approval of selected nominations for expert drafting groups
- comment on explanatory documents in the reviewing process
- clearance of draft ISPMs for the first consultation (Step 4)
- consideration of comments (Step 5)
- determining how to proceed with draft ISPMs that are modified as a result of comments (Step 6)
- development and approval of draft specifications for consultation
- adjustments to stewards (of specifications, draft ISPMs and technical panels)
- any other tasks decided by the CPM or the SC during a face to face meeting
- exceptional cases determined in consultation with the Secretariat and the SC Chairperson.

Rules for agreement

If there are no objections by the deadline, the SC is considered to be in agreement and a course of action in line with the decision should be taken.

If one or more SC members raise objection before the deadline, there is no consensus.

If there is no consensus, the SC Chairperson should summarize the issues and try to reformulate the proposed decision and submit for another round of consultation among SC members in order to try to reach consensus.

If there is still no consensus, the SC Chairperson should communicate what he/she feels are the main points to the SC.

Timeframe for response

Normally three weeks (except in urgent cases and for simple decisions).

At its May 2011 meeting⁹⁰, the SC decided that the combined duration of a forum followed by a poll would be three weeks (two-week forum, one-week poll) and that three weeks would be allowed if a poll was used alone. The SC also agreed that, in exceptional circumstances, this duration could be shortened by the Secretariat in consultation with the Chairperson.

⁸⁹ SC 2010-11, Appendix 5; previously ICPM-6 (2004); SC 2005-11, section 19.2; CPM-3 (2008); SC 2009-11; SC 2005-11.

⁹⁰ SC 2011-05, agenda item 4.2.

Secretariat email notice to SC members

At its May 2011 meeting⁹¹, the SC decided that the SC members would receive email notice of forums and polls (including the passage from a forum to a poll), and would continue receiving automatic notification emails when members have contributed in a forum or in a poll.

Communication of decisions made electronically

Final decisions taken during discussions via electronic means should be communicated to all SC members so that they are aware of the final outcome.

⁹¹ SC 2011-05, agenda item 4.2.

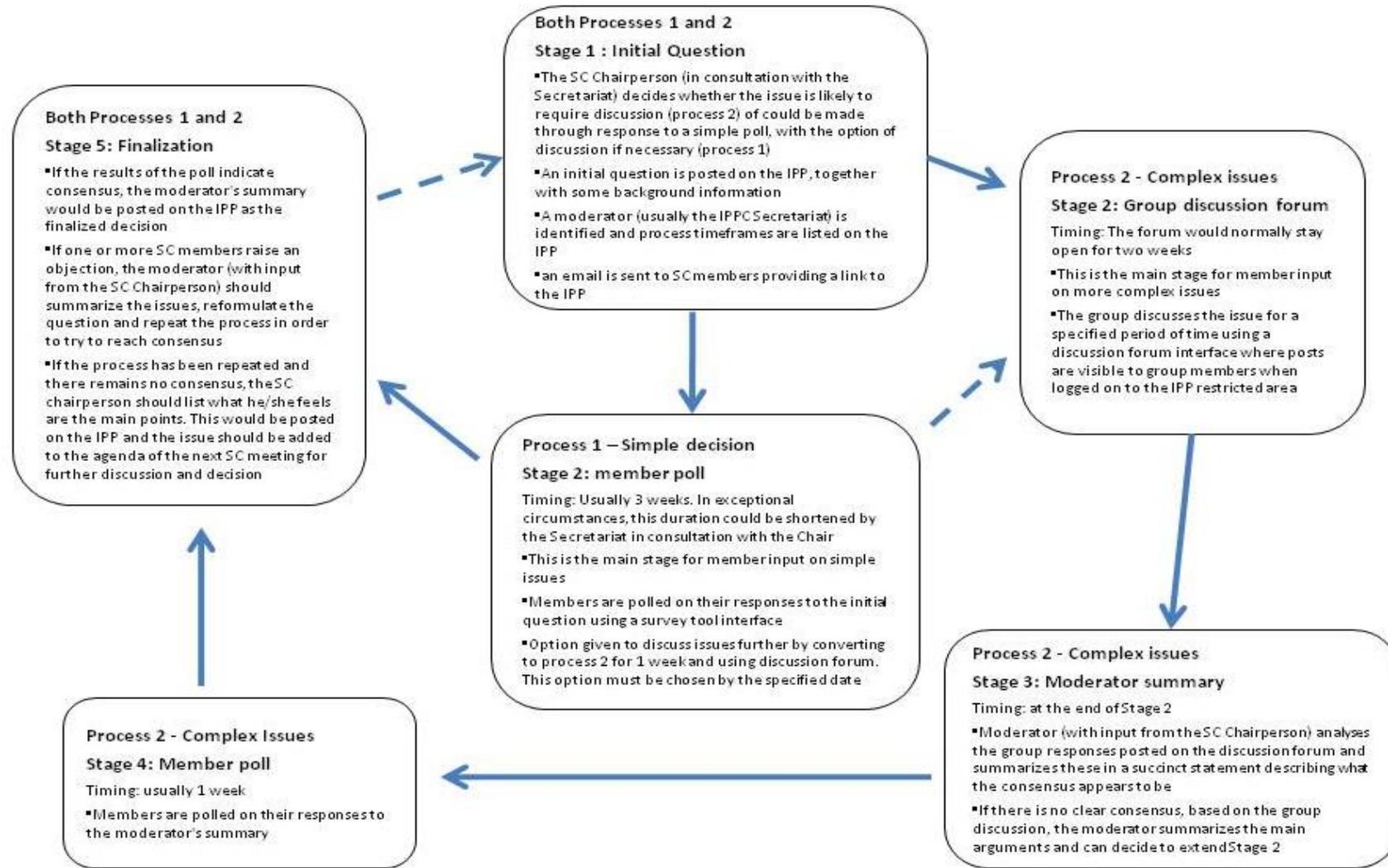


Figure 10: This diagram presents the process for an electronic decisions mechanism to implement the SC procedures for electronic discussion and decision-making⁹²

⁹² SC 2010-11, Appendix 6, updated SCs 2011-05.

6.9 Standards Committee Working Group

The Standards Committee Working Group (SC-7) is composed of seven SC members (one from each region) who are selected by the SC. The SC-7 supports the work of the SC by reviewing draft ISPMs after the first consultation.

*Terms of reference*⁹³

Scope

The SC-7 working group of the SC supports the work of the SC in the detailed consideration of documents.

Structure of the SC-7 Working Group of the Standards Committee

The SC-7 consists of seven members.

Functions of the SC-7

The SC-7:

- examines all of the substantive comments (including proposed amendments) identified by the steward;
- reviews and revises draft ISPMs prepared by the stewards in response to comments and proposes revisions to the SC;
- drafts SC responses to substantive comments not incorporated into the draft ISPM as identified by the steward;
- proposes which changes to draft ISPM should be considered further by the SC;
- explains the proposed revisions to draft ISPMs to the SC as required, and
- carries out other functions regarding draft standards and specifications as directed by the SC.

IPPC Secretariat

The Secretariat provides administrative, technical and editorial support as required by the SC-7. The Secretariat is responsible for record keeping regarding the work of the SC-7 and for the drafting of a report from the SC-7 meeting which is not held in conjunction with a SC meeting.

The Secretariat provides expertise in the use of the English language, if required.

Rules of procedure

Rule 1. Membership

Members should be selected from members of the SC, representing seven FAO regions.

Contracting parties agree that SC-7 members dedicate the necessary time to participate in a regular and systematic way in the SC-7 meetings.

The SC is responsible for selecting the SC-7 members. The IPPC Secretariat is notified of the selections.

Rule 2. Temporary replacement of members

Temporary replacement members of the SC-7 for specific meetings are selected by the SC members of each FAO region and the SC-7 member notifies the Secretariat well in advance of the meeting.

Rule 3. Period of membership

Terms of membership shall correspond to the terms of membership of the SC as outlined in Rule 3 of the [Terms of Reference](#) and [Rules of Procedure for the SC](#).

⁹³ SC 2008-11, Appendix 8.

Membership of the SC-7 lapses with membership of the SC or upon resignation.

Rule 4. Chairperson

The Chairperson of the SC-7 is elected by the members of the SC-7 at the beginning of each meeting.

Rule 5. Sessions

Meetings of the SC-7 are normally held at the FAO Headquarters in Rome or wherever the SC meets.

The SC-7 meets at least once per year. Depending on the workload and resources available, the SC, in consultation with the Secretariat and the Commission Bureau, may authorize the SC-7 to hold an additional meeting.

A session of the SC-7 shall not be declared open unless there is a quorum of at least five members.

Rule 6. Observers

Observers are limited to the Chairperson of the SC, stewards and subject experts who are invited by the Secretariat. Stewards and subject experts are invited to attend specified sessions of the SC-7 meeting. The SC-7 recommends experts to be invited if necessary. In cases when the SC-7 meets instead of the SC, members of the SC may participate as observers on request to the Secretariat.

Rule 7. Decision making

Decisions are taken through consensus. If no consensus is possible the matter is referred to the SC.

Rule 8. Reports

The Chairperson of the SC-7 will provide a verbal report to the SC on the activities of the SC-7 and in cases when the SC-7 do not meet in conjunction with a meeting of the SC, a full report of the meeting will be prepared by the Secretariat and adopted by the SC-7.

Rule 9. Records

Records shall be kept by the Secretariat. The record of the meetings shall include:

- SC-7 revisions to steward's draft ISPMs responding to comments, and
- SC-7 revisions to steward's draft summaries of responses to comments.

Rule 10. Language

The working language of the SC-7 should be English.

Rule 11. Amendments

Amendments to the Rules of Procedures and the Terms of Reference may be promulgated by the SC as required.

6.10 Deadlines for posting meeting papers and reports for SC meetings

The following due dates apply for posting meeting papers and reports for SC meetings (refer also to [ANNEX 7](#) to this manual).⁹⁴

- Papers, 2 weeks
- Draft ISPMs for May SC and SC-7, 1 March⁹⁵
- SC-7 revised draft ISPMs for November SC, 2 weeks before SC meeting⁹⁶
- Discussion papers: two weeks before the meeting
- Meeting reports: eight weeks after the meeting.

⁹⁴ 2011-06 Bureau report, Appendix 3.

⁹⁵ Draft ISPMs are posted on 1 July in the OCS for first consultation.

⁹⁶ Draft ISPMs are posted on 1 July in the OCS for second consultation.

7. EXPERT WORKING GROUPS

Once the SC approves a specification and resources are identified to hold an expert working group (EWG) meeting to develop the draft ISPM, the IPPC Secretariat opens a call for experts according to the approved specification. To be nominated as an expert, the nominee is requested to sign a statement of commitment ([ANNEX 6](#)). The EWG then meets and produces a draft ISPM and a meeting report. After the SC approves it, the draft ISPM is submitted for first consultation.

Contracting parties are encouraged to host EWG meetings. The meetings should be held in an area that is affected by the issues that the ISPM will seek to address. Hosting normally entails funding the arrangements (conference facilities and coffee breaks), a field trip (normally half day), as well as an official dinner.

7.1 Guidelines for the composition and organization of expert working groups⁹⁷

Criteria for the composition of EWG

An EWG:

- should have 6-10 participants;
- should have members representing a wide geographic area (including proportional developing country participation);
- should allow a participant from the host country to participate regardless of the EWG composition;
- should have a member from the SC if possible (e.g. steward);
- may be attended by any member of the Commission Bureau;
- may invite representatives of industry or others to provide expertise, but not to participate as members; and
- should not allow observers.

Members of EWG should:

- have necessary qualifications (scientific expertise, subject matter experience or experience in phytosanitary risk management); and
- be available to participate and contribute to the proceedings (e.g. provide discussion papers).

Procedure for nomination and selection EWG members:

- nominations are requested at the time of adoption of the List of topics for IPPC standards or specifications for standards are suggested at the (Interim) Commission or later when the specifications are put on the IPP;
- governments, NPPOs or RPPOs nominate experts to the SC;
- SC designates members of the EWG and submits a list to the (Interim) Commission Bureau and IPPC Secretariat for confirmation; and
- lists of EWG members, and representatives of industry or others, are added to the IPP.

⁹⁷ ICPM-5 (2003), Appendix XV.

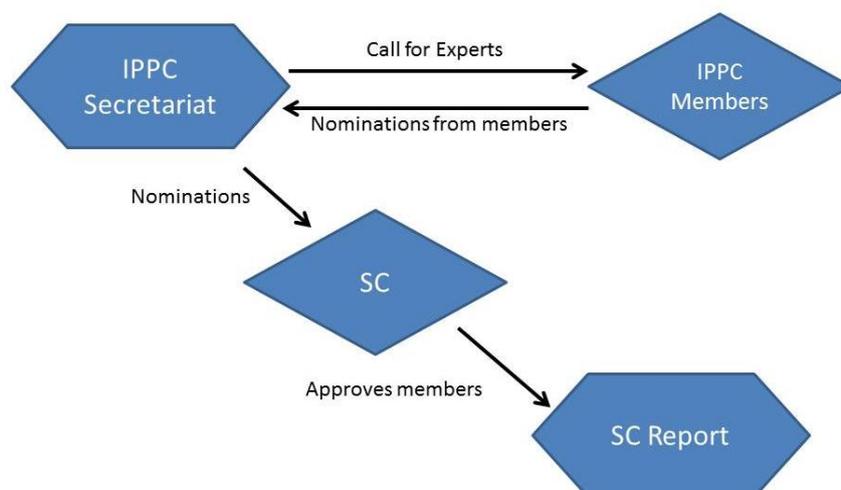


Figure 51: Call for experts

Criteria for the organization of EWG meetings

EWG members from developed countries should, wherever possible, be funded by their governments or employers for all costs connected to their participation.

EWG meetings should usually be organized to minimize incurring costs (e.g. administrative, accommodation, travel).

ICPM-5 (2003) noted the need for flexibility and agreed that deviations from the procedures may be necessary on a case-by-case basis for administrative contingencies.⁹⁸

7.2 Guidelines for the operation of expert working groups⁹⁹

Introduction

These guidelines have been prepared to aid those assisting, involved in organizing or attending an EWG meeting. The guidelines cover most of the requirements and procedures for the successful operation of an EWG. They are general guidelines so not all parts apply to every EWG meeting and some very specific requirements of some groups may not be included.

Funding

The main funding for EWG meetings comes from the IPPC budget. This is normally supplemented by member countries or organizations covering participants' expenses [travel and daily subsistence allowance (DSA)]. In some instances, member countries or organizations have funded, or partially funded, an EWG on a specific subject. A member country, organization or agency offering such funding or providing any level of assistance in operating an EWG is referred to as a collaborator in this document.

Participation of the IPPC Secretariat is funded by the FAO.

⁹⁸ ICPM-5 (2003), Paragraph 106.

⁹⁹ ICPM-7 (2005), Appendix VI.

Organization

EWG meetings can only be organized for those topics which have been adopted under the topics and priorities for standards at the Commission meeting. The organization of EWG meetings is normally done by the IPPC Secretariat with varying levels of assistance from a collaborator.

Meetings held at the FAO Headquarters in Rome or other FAO Offices

The IPPC Secretariat in general uses FAO offices to make logistical arrangements, including travel and DSA.

For a meeting at the FAO Headquarters in Rome, the IPPC Secretariat does not make hotel bookings, but names and addresses of accommodation are provided on the IPP (www.ippc.int).

Meetings held outside of FAO offices

Meetings held outside the FAO offices are usually arranged with the assistance of a collaborator. The collaborator may take various levels of involvement. A commonly operated system is where FAO enters into a letter of agreement with the collaborator (after agreeing on a budget) and transfers the funds needed for the meeting. The letter of agreement generally covers participants' expenses (travel and DSA) and may cover other items as appropriate. The collaborator is expected to make arrangements for participants' expenses, meeting rooms, photocopying, field trip etc.

In other cases the collaborator may fund the entire meeting (including participants' expenses, meeting room, photocopying, field trip etc.) or part of the meeting.

Roles of meeting organizers and participants

IPPC Secretariat

The Secretariat is expected to:

- plan a meeting date and seek a collaborator
- provide resources for the meeting, if held on FAO premises
- approve budget being paid by the IPPC and, if necessary, prepare a letter of agreement
- send a letter of invitation to participants (especially for the purpose of obtaining visas) and interact with the FAO visa office if needed
- liaise with collaborator, steward and EWG participants as appropriate
- arrange with the steward for the production of discussion papers
- attempt to find a replacement if an EWG participant approved by the SC is not able to attend the meeting (and inform the SC of such changes)
- describe and explain the mode of operation of the EWG and the roles and responsibilities of participants.
- coordinate the organization of the meeting and be responsible for the production of the draft ISPM and meeting report.

Collaborator

The collaborator is expected to:

- select location, make local arrangements, book meeting rooms and arrange for coffee breaks, official dinner (if appropriate) and field trip (if appropriate)
- assist in hotel bookings and obtaining visas
- provide, where possible, a rapporteur (who could be regarded as a resource outside of the EWG)
- arrange for local transportation as appropriate, including airport transfer and transfer from the hotel to the meeting room (or provides suitable information)
- arrange for or provide information on, as necessary, local transportation, local conditions, address of the hotel(s) and meeting venue, map, medical information etc.

- have facilities to provide copies of working papers and of documents drafted during the meeting, as appropriate.
- The collaborator has two seats in total, as observers, in the meeting. However, such participation is to be funded by the collaborator. The IPPC funding criteria will not apply.

Steward

The steward is expected to:

- explain the requirements of the specification to the EWG at the time of its first meeting. Hence, the steward should have a good understanding of the specification for the standard. If some issues are unclear, the steward should discuss the matters with the Secretariat or members of the SC.
- liaise with the Secretariat to ensure that discussion papers are produced for the EWG meeting
- assist with the running of the meeting. The steward may take the role of the Chairperson of the group or of the discussion facilitator
- assist the Secretariat to complete the draft standard
- assist the Secretariat in the preparation of the meeting report.

These duties are discussed in more detail in [Guidelines on the role of lead and assistant steward\(s\)](#).

Chair

The EWG Chairperson is selected at the meeting. The function is that of a normal Chairperson: to keep the meeting running smoothly and ensure participation by all experts. The Chairperson is expected to:

- act as facilitator of the group in its production of draft text
- assist the Secretariat, steward and rapporteur to prepare the EWG report
- be involved, where appropriate, with the steward in incorporating EWG comments into the draft standard.

Experts

The experts in an EWG should:

- take responsibility for their travel and accommodation arrangements and visa requirements. Experts are expected to be in attendance for the entirety of the EWG meeting and should plan to arrive before the meeting starts and depart after the meeting concludes. They should undertake whatever needs to be done in a timely manner so there are no urgent arrangements to be made by the organizers.
- prepare discussion papers, consulting with national or regional experts, as requested
- actively participate in the EWG meeting and in e-mail discussions prior to and after the meeting, if appropriate
- study discussion papers prior to the meeting and develop specific comments and text as appropriate
- in reflecting their individual viewpoints, aim to produce a globally acceptable standard
- assist stewards as needed, particularly when reviewing country comments
- respond, as appropriate, with comments to draft ISPMs within the agreed time.

Rapporteur

Each EWG requires a rapporteur to take down the text for the draft standard and, where possible, to take notes on the meeting discussions. The rapporteur should have facility with the English language and be able to use a computer for note taking. This is an extremely important supporting function of the EWG. Where possible the rapporteur should not be a member of the EWG but be part of the supporting team. If a member of the EWG does have to act as rapporteur, that expert's contribution to

the meeting discussions tends to be severely restricted. The rapporteur should, where possible, assist the Secretariat with the meeting report.

Meeting resources

The usual meeting resources are required for an EWG meeting. These include:

- a quiet room large enough to accommodate up to 10 people
- white boards, flip charts and marker pens
- computer and, preferably, a projector for the computer and an internet connection
- coffee/tea making facilities for work breaks
- copies of ISPMs, Commission reports, dictionary.

Time schedule for meeting

The meeting is scheduled by the Secretariat in coordination with interested parties and participants after the Commission has agreed to the List of topics for IPPC standards. Meeting dates are posted on the IPP. Experts are nominated by member countries and RPPOs and the specific experts for any particular EWG are selected by the SC. Following this, the nominated Secretariat person and the steward arrange:

At least 3 months prior to the meeting

The Secretariat makes a call for discussion papers.

At least 2 months prior to the meeting

The Secretariat:

- sends the discussion papers to the EWG members
- announces the meeting to participants by e-mail, indicating the date and place of the meeting, and sends out early personal invitations by e-mail and surface mail (in some cases via courier) to those members known to have less rapid national administrative procedures.

At least 1 month prior to the meeting

The Secretariat:

- asks experts to exchange comments on discussion papers
- sends a personal invitation letter by e-mail to each expert announcing the meeting (if not already done). When the meeting is in Rome, and for experts from countries not requiring a visa, paper copies of the letter of invitation may be sent only on request.
- asks experts if they have any specific needs
- forwards information provided by the collaborator.

The collaborator:

- sends a personal invitation letter
- provides information to the Secretariat

EWG members:

- undertake to obtain authorization from their authorities, if appropriate
- reply to the IPPC Secretariat and request financial assistance for their expenses, if needed, immediately after they receive a copy of their e-mail invitation
- reply to the organizers as stated in the letter of invitation to acknowledge receipt of the invitation and inform the organizer of their attendance (this requirement facilitates the obtaining of building passes etc.)
- ensure their visa and travel arrangements are completed in time.

At least 2 weeks prior to the meeting

The Secretariat forwards to the EWG members:

- an agenda for the meeting
- time and venue of the meeting
- planned meeting hours.

Output of the meeting

The EWG should finish the meeting with a draft standard. Occasionally, this is not the case and further discussions via e-mail are required. However, these should be limited to one month after the EWG meeting and the draft should then be released to the Secretariat.

Where substantial work still needs to be done on the draft standard the Secretariat, in consultation with the steward and SC, arranges for a further meeting.

Each EWG meeting should produce a draft standard and a report (made available on the IPP) of the meeting (noting major discussion points or contentious issues). The steward should be familiar enough with the issues of the draft standard to be able to attend a SC meeting (often the steward is a SC member) and discuss the draft with the SC.

Post-meeting consideration of the draft ISPM

The Secretariat will distribute draft ISPMs to EWG members and request them to submit comments within the agreed period of time. The EWG members will submit their comments as appropriate to the Secretariat within this agreed time.

[Guidance on drafting standards and meeting documents is available in the IPPC Style Guide.](#)

7.3 Deadlines for posting expert working group meeting papers and reports

[The following deadlines apply for posting meeting papers and reports for EDG meetings \(refer also to ANNEX 7 to this manual\):](#)

- Papers: 2 weeks prior to the meeting,
- Meeting reports: 8 weeks after the meeting.

8. TECHNICAL PANELS

There are currently five technical panels under the remit of the SC. Each deals with one specific technical area according to their specification in order to assist the SC. The panels normally meet once a year. Additionally, some panels meet virtually during the year.

For the selection of experts to the technical panels, the IPPC Secretariat opens a call to nominate experts in accordance with the expertise needed as stated in the approved specification for the specific technical panel. To be nominated as an expert, the nominee is requested to sign a statement of commitment ([ANNEX 6](#)).

Contracting parties are encouraged to host TP meetings. Hosting normally entails funding the arrangements (conference facilities and coffee breaks), and funding a field trip (normally half day), as well as an official dinner.

Technical panels (TPs) were established¹⁰⁰ to develop technical standards. Five TPs are currently established:

- [Technical panel 1: Technical panel on Diagnostic Protocols \(TPDP\)](#)
- [Technical panel 4: Technical Panel on Forest Quarantine \(TPFQ\)](#)
- [Technical panel 5: Technical Panel for the Glossary \(TPG\)](#)
- [Technical panel 2: Technical panel on Pest Free Areas and Systems Approaches for Fruit Flies \(TPFF\)](#)
- [Technical panel 3: Technical Panel on Phytosanitary Treatments \(TPPT\)](#)

TP members should work according to the specification for each TP approved by the SC and the procedures of the TP, and which should be in accordance with other procedures approved by the SC.

Guidance on drafting standards and meeting documents is available in the [IPPC Style Guide](#).

8.1 Recommendations for the use of technical panels¹⁰¹

The SC should establish TPs in specific areas to assist the work of the SC.

These TPs should work under general specifications established by the SC, according to [Terms of Reference of the SC](#), with membership according to current EWG membership rules. TPs should be groups responsible for the development of specific standards [...] and also for providing advice at the request of the SC in their specific allocated subject area.

Under the direction of SC, TPs should provide the SC with: draft technical standards, advice on draft technical standards [...], advice on country comments and advice on topics and priorities for technical standard development in their field of activity and other task as requested by SC. TPs may draw on specialized expertise, the work of other working groups, other appropriate standards and the work of other relevant organizations in their work, as appropriate. The Chairperson of the TP should act as the steward for the subject area of the TP.

Potential areas for the formation of TPs may include technical matters such as diagnostics, seed pathology, specific pest free areas, organism or commodity specific standards or treatments.

When the specific work of a TP is completed the SC should disestablish the group.

¹⁰⁰ The ICPM-6 (2004) made provision for technical panels to develop standards under the fast-track Standard setting process (paragraph 77); the CPM-3 (2008) (paragraph 81) and the CPM-7 (2012) amended this process.

¹⁰¹ ICPM-6 (2004), Appendix IX, Paragraph 2.

8.2 Terms of reference and Rules of procedure for technical panels

These *Terms of reference* and *Rules of procedure for technical panels* were developed and approved by the CPM-3 (2008).¹⁰²

Terms of reference

1. Scope of Technical Panels

Technical Panels (TPs) assist the SC in the development of ISPMs in their specified technical areas¹⁰³ on topics which have been determined by the Commission.

2. Objective

The main objective of TPs is to develop specific draft standards, annexes, supplements, amendments or additions to standards on topics in their specified technical areas requiring continuous work, as well as advising the SC on scientific or technical matters.

3. Structure of Technical Panels

TPs should consist of 6-10 members with the necessary scientific expertise representing a wide geographic area (including proportional developing country participation). In specific cases and depending on the technical area, a TP may consist of more or less members according to the SC's decision.

4. Functions of Technical Panels

TPs operate under the guidance and supervision of the SC, and serve as a forum for providing:

- draft standards, annexes, supplements, amendments or additions to standards in their specified technical areas
- advice on consultation comments in their technical area
- advice on subjects, topics and priorities for technical standard development in their technical area, and
- other tasks as requested by the SC within its mandate and to progress the objectives of the TP.

5. IPPC Secretariat

The Secretariat provides administrative, technical and editorial support as required by TPs. The Secretariat is responsible for reporting and record keeping.

6. Establishment of Technical Panels

TPs are established by the Commission and work on an on-going basis until disestablished by the Commission on the recommendation of the SC.

Rules of procedure

Rule 1. Membership

Members of TPs should have the necessary scientific expertise and subject matter experience, and should be able to participate and contribute to the proceedings. The steward of the TP is considered a member.

Membership of TPs should be reviewed by the SC on a regular basis and may be adjusted as necessary, taking into account, in particular, changes in the needs of scientific or other expertise required and in the professional duties of the experts.

¹⁰² CPM-3 (2008), Appendix 11.

¹⁰³ For details on the terms “technical area”, “topic” and “subject”, see [Hierarchy of terms for standards](#).

Rule 2. Procedure for nomination and selection of Technical Panel members

Members of TPs are nominated and selected according to the following:

- the Secretariat requests nominations as directed by the SC;
- contracting parties, NPPOs, RPPOs or, exceptionally, the IPPC Secretariat, submit nominations of experts;
- the Secretariat summarizes and comments on the nominations, and submits them to the SC and the Commission Bureau. The SC selects the members based on their demonstrated expertise and communicates this to the Secretariat; and
- the Secretariat maintains lists of Technical Panel members on the IPP.

Rule 3. Period of Membership

Members of TPs may serve for a 5 year period¹⁰⁴, after which, with the member's agreement, the SC may extend membership for additional terms. The SC may, in accordance with Rule 1 of these Rules of Procedure, change or amend the membership of TPs at any time. Membership should be reviewed regularly by the SC, and membership may be confirmed. Extension of membership does not require the application of the nomination procedure according to Rule 2. Members may at any time withdraw from the TP.

Rule 4. Chairperson

The Chairpersons of TPs are elected at each meeting by their members.

Rule 5. TP Steward

Each TP should have a TP steward, selected by the SC. Where possible, that TP steward should be a member of the SC. The TP steward is responsible for liaison between the SC and the TP, ensuring the TP follows the guidance given by the SC.

Rule 6. Other stewards

Stewards assigned by the SC to work on a specific standard, annex or supplement referred to the TP may also participate in that TP meeting.

Rule 7. Observers and participation of non-members of the Technical Panel

Tps should not allow observers.

In specific cases, with prior agreement of the TP members and without objection of the SC, the TP may invite individuals with specific expertise to participate on an ad hoc basis at a specified meeting or part of a meeting of a TP, as invited experts.

A representative of the host country and/or organization may participate in the meeting of a TP, and assist the IPPC Secretariat in the organization and efficient running of the meeting.

Decisions of TPs are taken by its members only.

The SC in November 2012 agreed that the TPDP could invite to their meetings a lead author or member of an editorial team when their DP was being reviewed¹⁰⁵.

Rule 8. Sessions

Tps should meet as necessary, generally once a year. E-mail, teleconferencing and other modern communication methods should be used where possible to prepare and supplement face to face meetings of TPs¹⁰⁶.

¹⁰⁴ The CPM-3 (2008) noted that the calculation for 5 year terms for membership of technical panels would commence with the adoption of the Terms of Reference and Rules of Procedure (CPM-3 (2008), Paragraph 95.2).

¹⁰⁵ SC 2012-11, paragraph 120.

TP members should work according to the specification for each TP approved by the SC and the procedures of the TP, which are included in the IPPC Procedure Manual and which should be in accordance with other procedures approved by the SC.

Rule 9. Approval

Approvals relating to draft documents and agreement on advice provided to the SC should be by consensus and communicated to the SC by the relevant steward. If consensus is not reached, contentious issues should be bracketed in the text of the draft document, positions explained in the report and brought to the attention of the SC.

Rule 10. Reports

The report of each TP meeting should be published on the IPP. Major discussion issues should be noted in the report and the rationale for conclusions should be recorded.

The report should be presented to the SC by the TP steward advising the SC of the specific actions that they are requested to take.

Rule 11. Working Language

English should be the working language of TP meetings.

Rule 12. Amendments

Amendments to the Terms of Reference and Rules of Procedures, if required, should be adopted by the Commission.

Common procedures for technical panels¹⁰⁷

Tps operate under the guidance and supervision of the SC in accordance with the Terms of Reference and Rules of Procedure for Technical Panels¹⁰⁸.

In relation to their technical areas, TPs should:

- Assist in the development of draft standards, annexes, appendixes, supplements, amendments or additions to standards in response to requests for work by the Commission and as directed by the SC. Specific guidance is provided in the specification for each TP.
- Propose topics and priorities for new or revised standards (including supplements, annexes, appendixes or other components of standards) for inclusion in the Commission work programme via the biennial call for topics, and in accordance with the Procedure and criteria for identifying topics for inclusion in the *List of topics for IPPC standards* (see [Topics](#)).
- Propose subjects and priorities to the SC for new or revised standards (including supplements, annexes, appendixes or other components of standards) under any topic that is already on the List of topics for IPPC standards.
- Provide advice on work areas that need further research or investigation and propose a strategy for progression of the topic.
- Provide advice on whether the work of the technical panel overlaps with the work of other IPPC groups and ensure coordination with these groups to prevent duplication of work. Propose a mechanism for any interactions.

¹⁰⁶ The bulk of TP meetings have been moved to the summer months in order to avoid conflicts with the peak preparation period for the Commission Meeting (Bureau June 2009, paragraph 12).

¹⁰⁷ The CPM-3 (2008) requested the SC to carry out pending actions as detailed in paragraph 22 of the document CPM 2008/21 to include TPs, under the guidance of the SC, to check each TP working procedure to make sure that it is not contradictory to changes in the Standard setting procedures (CPM-3 (2008), Paragraph 99.6). As modified by the SC 2008-11.

¹⁰⁸ CPM-3 (2008), Appendix 11.

- Provide advice on outcomes and issues of relevant IPPC workshops or meetings or other relevant meetings and monitor technical and scientific progress in the relevant field. Where appropriate, make recommendations to the SC.
- Propose an annual work programme for the technical panel taking into account the direction given by the SC.
- Produce a report of each meeting in accordance with Rule 10 of the Terms of reference and Rules of procedure for TPs, reporting on all the elements above and presenting, as relevant, new or revised technical panel working procedures.
- Produce an executive summary of the work of the technical panel for the SC as necessary, including recommendations for action. This is reported to the SC, through the steward, generally at the May meeting of the SC (or at the November meeting for specific topics if needed).

Work on “subjects”

The Technical Panel on the Glossary, Technical Panel on Diagnostic Protocols and Technical Panel on Phytosanitary Treatments are currently the only technical panels allowed to work on “subjects”.¹⁰⁹

8.3 Deadlines for posting technical panel meeting papers and reports

The following deadlines apply for posting meeting papers and reports for TP meetings (refer also to [ANNEX 7](#) to this manual):

- Papers: 2 weeks prior to the meeting
- Meeting reports: 8 weeks after the meeting.

¹⁰⁹ See [Hierarchy of terms for standards](#).

8.4 Technical Panel on Diagnostic Protocols (TPDP)

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The TPDP Instructions to Authors are posted separately on the TPDP page of the IPP¹¹⁰.

Current tasks of the TPDP

The tasks of the TPDP¹¹¹ are described in the [Specification TP 1 - Technical Panel on Diagnostic Protocols](#)¹¹².

Issues associated with technical standards

The CPM-4 (2009) discussed issues associated with technical standards¹¹³ and:

- Underlined its agreement with the statements below in accordance with ISPM 27:

Diagnostic Protocols are developed to allow general use by competent diagnosticians in a laboratory performing pest diagnosis as part of phytosanitary measures. The methods described in diagnostic protocols provide the minimum requirements for reliable diagnosis of the specified regulated pests and include information on the specificity, sensitivity and reproducibility of these methods, where available. Methods providing other levels of specificity, sensitivity and reproducibility are also included where appropriate.

DPs usually describe more than one method to take into account the capabilities of laboratories and the situations for which the methods are applied. They provide guidance, but NPPOs should determine which methods are appropriate for their circumstances.

Once adopted, DPs will be reviewed regularly by the TPDP and updated to take into account advances in diagnostic methods.
- Acknowledged that DPs are based on the level of scientific knowledge available at the time of drafting. They will have been considered by appropriate experts and reviewed by a TPDP referee for consistency with the requirements of ISPM 27 prior to submission to the Standards Committee (SC).

*TPDP working procedures*¹¹⁴

Annual work programme

- The TPDP annually identifies priority subjects for diagnostic protocols (DP) taking into account guidance from the SC, and any requests for reviews and amendments to a DP that have been

¹¹⁰ TPDP page of the IPP: <https://www.ippc.int/en/core-activities/standards-setting/expert-drafting-groups/technical-panels/technical-panel-diagnostic-protocols/>.

¹¹¹ Introduced into the work programme by ICPM-6 (2004).

¹¹² Specification approved by the SC 2004-04. First revision approved by SC 2004-11. Second revision approved by SC 2007-05. Third revision approved by SC 2011-05. Fourth revision by SC 2012-04.

¹¹³ CPM-4 (2009), Paragraph 117.

¹¹⁴ Approved by the TPDP 2006-10, noted by the SC. Revised by the TPDP 2008-06 (Annex 5), noted by SC 2008-11. Revised by the TPDP 2010-07 (Annex 5), noted by the SC 2011-05. Revised by the TPDP 2012-07, noted by SC 2013-05.

received by TPDP members and the criteria for prioritization of DPs (see [Criteria for the prioritisation of DPs](#)). The TPDP submits recommendations on subjects to the SC. National plant protection organizations (NPPOs) and regional plant protection organizations (RPPOs) may also submit subjects for a DP in response to the IPPC Secretariat's biennial call made for topics to be considered for the List of topics for IPPC standards.

- The TPDP reports annually through the Steward to the SC. This report includes the achievements during the year, proposals for subjects, a proposed work programme, report on tasks allocated by the SC, such as revision of working procedures as necessary, and other items needing SC decision.

Nominations of experts

Once subjects for DPs are put on the work programme, the IPPC Secretariat issues a call requesting nominations of experts for DPs identified as priorities and posts the call on the IPP. For seed-related DPs the Secretariat also informs the International Seed Testing Association and the International Seed Federation of the call.

- The TPDP discipline leads are encouraged to notify relevant experts of the call.
- Experts are encouraged to be nominated by NPPOs or RPPOs, but all nominations will be considered
- The CVs of nominated experts are reviewed by the discipline lead taking into account the expertise required for authors for DPs (as detailed below).
- In parallel to the call, the discipline lead may identify one expert that would be essential for the development of the DP, and contact that expert to ensure his/her commitment.
- Considering nominations from the call and possibly the experts identified in parallel, the TPDP discipline lead recommends a DP drafting group, with an expert to lead the development of a DP (lead author) and a small group of experts to assist him/her with the development (co-authors).
- This information, along with a summary of the expertise of each expert, is submitted to the TPDP, who agrees or amends the recommendations as appropriate. The list of DP drafting groups (with lead authors and co-authors) and referees is included in the TPDP report, which is presented to the SC.

Expertise required for experts to draft DPs

The DP drafting group should have appropriate global coverage.

Authors of existing DPs, such as regional DPs, should be included in the DP drafting group, where appropriate.

Core expertise required

Diagnostic expertise with the pest.

Additional expertise that would be helpful:

- taxonomy and molecular diagnostics
- practical experience related to the pest (detection, identification, isolation etc.)
- drafting of DPs (such as regional DPs)
- development of novel diagnostic methods
- experience using DPs for diagnosis of regulated pests, including in the context of international trade
- experts associated with international seed testing organizations may be included, where considered appropriate by the TPDP.

The development of a draft DP

The lead author uses ISPM 27 (*Diagnostic Protocols for Regulated Pests*) and the [Instructions to authors of diagnostic protocols for regulated pests](#) to produce a first draft. Additional guidance is provided by the TPDP discipline lead if needed. The discipline lead and the lead author should, within the first 3 months, agree on a timeframe for the development of a draft (including appropriate consultation of co-authors), leading to the preparation of a first draft within the first year (max. 6-12 months).

The lead author is assisted in the preparation of the DP by the DP drafting group.

- Where the subject of the DP is above species level, or the scope is unclear, the discipline lead and lead author, in consultation with the co-authors, should propose amendments to the scope of the DP. The TPDP may modify the amended scope and should inform the DP drafting group. The TPDP should report on its discussions to the SC, in the report of a meeting or by email through the Secretariat.
- Where disagreement arises within a DP drafting group during preparation of a protocol, the lead author should discuss the issues with the discipline lead. The discipline lead may discuss the issues, if necessary, with the full DP drafting group in order to resolve them. The discipline lead should decide how to proceed based on scientific evidence and present a proposal to the TPDP. Once the proposal is final, it should be reported to the DP drafting group.

Changes to the DP drafting group

- When an expert who has been chosen as lead author is unable to continue in this role, the TPDP discipline lead will ask a member of the DP drafting group to become the lead author. The TPDP is informed of the change of leadership.
- Where additional experts are required for the DP drafting group, the TPDP discipline lead, in consultation with the lead author, chooses from the experts nominated in the original call for authors. If no suitable experts are available, the IPPC Secretariat is requested to seek new nominations for the DP by announcing the vacancy on the IPP, with a 30 day deadline for receipt of CVs. The TPDP discipline lead or DP drafting group may also notify relevant experts of the call. The TPDP discipline lead reviews the CVs and submits a recommendation of an expert, along with a summary of their expertise to the TPDP, who reviews and approves the addition, which is included in the TPDP's annual report to the SC. In special circumstances (e.g. when the expertise was so small for the pest that the discipline lead was aware of all experts working on it), discipline leads might "hand-pick" an expert, and submit a recommendation to the TPDP.
- In its review of the status of protocol the TPDP also reviews the list of lead authors, co-authors and referees to identify those teams where additional authors or replacements are needed.
- When the lead author or a co-author is not answering, the discipline lead should request the Secretariat to contact the NPPO (date of the last attempt to contact the expert should be provided).

If, after all due contacts, the status of the lead author or co-author cannot be clarified and verified within 1 year of the first Secretariat's attempt, the author is withdrawn from the DP drafting group, and the Secretariat informs the discipline lead, the withdrawn author and his/her NPPO contact point.

Assessment of draft DPs by the TPDP

- The lead author and co-authors discuss the draft DP (possibly involving other experts)
- Once the lead author and co-authors are satisfied with the draft DP, the lead author submits it to the TPDP discipline lead.
- The TPDP discipline lead reviews the draft DP and ensures it meets all the requirements set out by ISPM 27 (*Diagnostic Protocols for Regulated Pests*) instructions previously agreed to by the TPDP including the checklist for DPs (see [Checklist for diagnostic protocol discipline leads and referees](#)).

- The lead author and co-authors discuss the draft DP (possibly involving other experts)
- Once the lead author and co-authors are satisfied with the draft DP, the lead author submits it to the TPDP discipline lead.
- The TPDP discipline lead reviews the draft DP and ensures it meets all the requirements set out by ISPM 27 (*Diagnostic Protocols for Regulated Pests*) instructions previously agreed to by the TPDP including the checklist for DPs (see [Checklist for diagnostic protocol discipline leads and referees](#)).

Review of consultation comments on a draft DPs

- Consultation comments are compiled by the Secretariat
- Compiled consultation comments are forwarded to the TPDP discipline lead for action, and the TPDP and SC are informed that the comments are posted on the IPP.
- Consultation comments are reviewed by the discipline lead, which produces an amended draft (with track changes) and includes responses to consultation comments within the compiled consultation comments. The TPDP discipline lead should consult with and may be assisted by the lead author and co-authors in this process, and should be assisted by the steward on specific matters. The amended draft and responses to comments are circulated to all TPDP members, with a recommendation from the discipline lead and TPDP steward on how to proceed.

How to respond to consultation comments:

- **Incorporated:** for comments that have been incorporated exactly as written.
- **Modified:** for comments that have been incorporated, but not exactly as written. When a comment has been or incorporated not exactly as written, the response should provide the reasoning for this decision and be brought to the attention of the TPDP.
- **Considered, but not incorporated:** for comments that have not been incorporated. When a comment has been considered but not been incorporated, the steward's response should provide the reasoning for this decision and be brought to the attention of the TPDP.
- **For consideration by the TPDP:** for comments that require consideration or review by the TPDP. This should also be used to indicate a comment that was incorporated, but should be brought to the attention of the TPDP. Note that, once the TPDP approves the revised draft and the responses to consultation comments, this comment should be removed to be presented to the SC and replaced by one of the three responses above.
- Substantial comments that have broad implications should be discussed by the TPDP, even if the discipline lead might have made a proposal for the specific DP under consideration. This process is coordinated by the discipline lead or TPDP steward. Proposed changes may be incorporated or not, or the TPDP may recommend further study, with the reasons documented.
- Whether the draft is changed or not as a result of consultation comments, the compiled comments and responses to comments are submitted to the SC.
- If the draft standard is changed as a result of comments, the draft should be accompanied by recommendations on how to proceed.
- The CPM has delegated its authority to the SC to adopt DPs on its behalf. Once the SC approves the DP, the Secretariat makes it available and contracting parties are notified. The notification period for approved DPs is twice a year on defined dates. Contracting parties have 45 days to review the approved DP and submit an objection, if any. If no objection is received, the SC, on behalf of the CPM, adopts the DP. DPs adopted through this process are noted by the CPM at its following meeting and attached to the report of the CPM meeting. (CPM-7, 2012). If objections are received, the TPDP is consulted and the SC decides whether they are technically justified, and decides on further steps.

Review of published DPs

- On a regular basis, the TPDP members review existing DPs in their disciplines. It was considered appropriate that adopted DPs be reviewed every 5 years unless a specific issue was raised. In particular, the TPDP members for the discipline should make a literature review, and bring to the attention of the TPDP any new literature that may have an impact on the DP.
- If revision is necessary, and in consultation with the lead author and co-authors, the discipline lead recommends updates to take into account newly published and/or validated methods, and modifications to methods in existing DPs. Proposals for update are presented to the TPDP. If a change is required, the TPDP makes a proposal and sends it to the SC with recommendations.
- When a technical revision is required for an adopted DP, the SC can adopt the updates to adopted DPs via electronic means. The revised DPs must be made publicly available as soon as the SC adopts them. DPs revised through this process are noted by the CPM and attached to the report of the CPM meeting (CPM-7, 2012). Criteria of the type of revisions that could be submitted to this process were suggested by the TPDP in November 2012, to be discussed by the SC.
- The following sentence of ISPM 27 Appendix 1 section 2 should be included in each DP from now on in order to be clear that adopted DPs will be reviewed and attract comments once users have started using the protocols: “A request for a revision to a diagnostic protocol may also be submitted by NPPOs, RPPOs or CPM subsidiary bodies through the IPPC Secretariat (ippc@fao.org), which will in turn forward it to the TPDP.”

The SC May 2013¹¹⁵ defined the criteria for DPs revision as a technical revision that should be done by the TPDP as follow:

- Editorials
- Taxonomic changes that do not affects the identification of the pest (and do not change the diagnosis)
- Addition of validation data relating to the methods already on the DP
- Improved specification of method, e.g. additional descriptors such as amount of DNA
- Pest information
- New information on distribution of official notification
- New host that may help the diagnosis reported in an official notification and does not affect the diagnosis.

Other revisions different from the above, would need to be subject to the normal DP adoption process (i.e. consultations, redrafting, SC approval, objection period, SC adoption).

DPs should be reviewed every 5 years.

Invitation of experts to TPDP meetings

The SC agreed that the TPDP could invite to their meetings a member of the DP drafting group when their DP was being reviewed.¹¹⁶

¹¹⁵ SC 2013-05, agenda item 9.1.

¹¹⁶ Agreed by the SC 2012-11, paragraph 120.

Role of TPDP Members¹¹⁷

TPDP members:

- Track and manage preparation of DPs under their lead, including editing and ensuring compliance with ISPM 27
- Consult and use TPDP procedures available on the TPDP work area.
- Ensure proper communication with lead authors and editorial teams, including: contact authors and editorial team once selected; inform authors and editorial teams of changes in procedures or instructions relevant to development of DPs; ensure that lead authors engage their editorial teams in the drafting process; maintain appropriate contact with lead authors and editorial teams. In case of communication problems with an expert (wrong address, no response, etc.), contact the Secretariat with details on last attempt(s).
- Identify protocols for which new lead authors or additional/replacement members of the editorial team are needed.
- Regularly update the document on the status of DPs for each DP under their lead (at dates indicated on the annual work plan) and provide updates at the TPDP meeting, including issues raised during the development of the DP.
- Act as referees for draft DPs and assemble comments using the “checklist for DP review”
- Use the “checklist for DP review” for each DP under their lead, when receiving the first draft and before presenting a draft DP to the TPDP.
- Manage the response to comments received during member consultation
- Review published DPs in their discipline, and recommend revision as appropriate
- On demand from the Secretariat, arrange for the preparation of a PowerPoint presentation on a draft DP for member consultation, in preparation for regional workshops for the review of draft ISPMs
- When they leave the TPDP, transmit appropriate information to the new member for the discipline.

¹¹⁷ Approved by the TPDP 2006-10 and noted by the SC. Revised by the TPDP 2008-06 (Annex 5, noted by the SC 2008-11. Revised by the TPDP 2010-07 (Annex 5) and noted by the SC 2011-05 as part of the TPDP working procedures.

Criteria for the prioritisation of diagnostic protocols¹¹⁸

The criteria are not in order of priority.

Need for international harmonization of the diagnostic techniques for the pest (e.g. due to difficulties in diagnosis or disputes on methodology)

Relevance of the diagnosis to the protection of plants including measures to limit the impact of the pest.

Importance of the plants protected on the global level (e.g. relevant to many countries or of major importance to a few countries).

Volume/importance of trade of the commodity that is subjected to the diagnostic procedures (e.g. relevant to many countries or of major importance to a few countries).

Other criteria for topics as determined by CPM that are relevant to determining priorities

Balance between pests of importance in different climatic zones (temperate, tropics etc) and commodity classes.

Number of labs undertaking the diagnosis.

Feasibility of production of a protocol, including availability of knowledge and expertise.

¹¹⁸ Approved by the TPDP 2007-09, modified and approved by the SC 2007-11, minor editorial by the TPDP in 2010 (Annex 8 of the report), submitted to, modified and supported by the SC 2011-11.

Checklist for diagnostic protocol discipline leads and referees¹¹⁹

The comments column is intended to for the reviewer to:

- give further guidance and suggestions on how the items should be modified
- help identify technical issues in the protocol that should be mentioned for countries when sending the protocol for consultation (i.e. to be included on the cover page of the protocol), especially those that raised discussion or debates during the development of the protocol.

The checklist is used at several stages:

- by the discipline lead to cross-check the draft sent by the lead author
- by the referee
- by the discipline lead before submitting the protocol to the TPDP. The completed checklist should be provided to the TPDP together with the protocol.

Section	Issue to be considered	Y/N	Comments
Cover note	Does the draft include a cover note in the format and content required by instructions to authors (this should be in the draft at least when it is sent to the referee)		
1 General overview			
1.1 ISPM 27	Does the protocol comply with ISPM 27- are all the sections present?		
1.2 Formatting	Is the draft formatted correctly – no SOP formats, no appendices, etc.		
1.3 Clarity	Is the protocol clear and concise; does it provide sufficient information for diagnosis of the pest and sources of further information		
1.4 Global relevance	Does the protocol provide sufficient information for users globally e.g. inclusion of different types of methods (where appropriate) and their limitations and/or benefits; global rather than regional perspective, unless the organism only occurs in one region and is of concern globally)		
2. Pest information			
2.1 Length	Does the section provide a brief summary (no more than 1 page) of the general information on a pest?		
2.2 Reference to datasheets/databases	Does the section refer to appropriate datasheets/databases (rather than replicating information)?		
2.3 Geographical information	Is any geographical information sufficiently general?		
3. Taxonomic information			
3.1 Format	Is this presented in the correct format?		
3.2 Accuracy	Is the information accurate? Are appropriate references given for scientific names?		
4. Detection			
4.1 Appropriate information	Does this section contain appropriate information on methods for detection of the pest? (no information on procedures for inspectors)		

¹¹⁹ Approved by TPDP 2010 (Annex 7 of report), noted by the SC 2011-05.

Section	Issue to be considered	Y/N	Comments
4.2 Adequate description of the methods	Is there enough information for the method to be used by an expert? Does the protocol refer to manufacturer's instructions when these are available?		
4.3 Instructing NPPOs	Make sure the protocol does not instruct the NPPO on the methods to use		
4.4 Sensitivity, specificity, reliability	Is there information on the sensitivity, specificity and reliability of each methods quoted, including details of the scope of any ring testing that is mentioned?		
4.5 Confusion with other organisms	Does the protocol provide sufficient information on organisms or symptoms that could be confused with the pest?		
4.6 Choice of methods	Where less commonly used methods are included, does the protocol indicate that these are for information?		
4.7 Commercial kits/brand names	Where commercial kits are available, is the reason for the choice of inclusion of a specific kit rather than others given? If brand names are used, are they essential? Is the approved "disclaimer" included?		
5. Identification			
5.1 Minimum requirements	Does the protocol provide guidance on the minimum requirements for a positive diagnosis?		
5.2 Instructing NPPOs	Make sure the protocol does not instruct the NPPO on the methods to use		
5.3 Specificity sensitivity and reliability	Is there information on the sensitivity, specificity and reliability of each methods quoted, including details of the scope of any ring testing that is mentioned?		
5.4 Combination of methods	Where a combination of methods is required, is there an explanation of the reason for this?		
5.5 Commercial kits/brand names	Where commercial kits are available, is the reason for the choice of inclusion of a specific kit rather than others given? If brand names are used, are they essential? Is the approved "disclaimer" included?		
5.6 Decision scheme	Does the text and flow diagram (if present) clearly present the options available to NPPOs?		
5.7 Flow diagram (note: detection steps might also be included)	Does the protocol need a flow diagram (e.g. if several methods are needed for the diagnosis, and / or if many alternative methods are included)? Does it contain the minimum requirements for a positive diagnostic? Is it in line with the text? Is it accompanied by some explanation in the text, indicating the methods available and their advantages? Is it cross-referred to at the beginning of the identification section?		
6 Records			
6.1 Additional requirements	Does the protocol indicate the requirements for records or evidence in addition to that listed in ISPM 27 that are essential for the pest species?		
6.2 Cases where other NPPOs are involved	Does the protocol provide the specific records and evidence that should be retained in cases where other NPPOs may be involved (e.g. interceptions)		
7. Contact points			
7.1 Suitable coverage	Are the contact points appropriate?		
8. Acknowledgements			

Section	Issue to be considered	Y/N	Comments
8.1	Do the acknowledgements reflect those involved?		
9. References			
9.1 Complete	Are all the references in the text included in the reference list?		
9.2 Accurate	Do all the references contain the information required in Instructions to Authors? (e.g. Do they have the year of publication, journal titles in full, page numbers etc.) If more than 40 references, consider whether all are needed.		
10 Figures and photographs			
10.1 Necessary	Are all the figures necessary, or are they “nice to have”?		
10.2 Colour photos	Are these required or should they be posted on the IPP for additional information?		
10.3 Line drawings/photographs	Are line drawings sufficient for diagnosis, or are photographs required?		
10.4 All figures	Do the figures meet the requirements of the instructions for authors		
10.4 Separate file for figures	Are illustrations separate from the text (2 separate files needed: Part 1 as containing only the text (as Word file); Part 2 containing all figures (including line drawings, photos, flow diagram) (as Word and PDF files)		

8.5 Technical Panel on Forest Quarantine (TPFQ)

*Current tasks of the Technical Panel on Forest Quarantine*¹²⁰

The tasks of the Technical Panel on Forest Quarantine (TPFQ) are described in the [Specification TP 4 Rev 2 - Technical Panels on Forest Quarantine](#)¹²¹.

*Procedure for submission of treatments for forest quarantine*¹²²

New treatment submissions should be forwarded to and evaluated by the TPPT. The TPFQ would then evaluate approved treatments for incorporation within appropriate ISPMs.

Process:

Step 1: An applicant (company, NPPO, RPPO, organization, etc.) has an idea for a treatment to be included in an ISPM managed by the TPFQ and obtains submission information from IPPC website.

Step 2: The applicant formulates the submission which contains reasoning/data in support of the application as per the requirements of standard established by TPPT, and any additional criteria necessary for inclusion in the TPFQ ISPM.

Step 3: The applicant forwards the completed submission to the Secretariat which then forwards the application to the TPPT for evaluation as an IPPC phytosanitary treatment, and to the TPFQ for evaluation as a treatment suitable for inclusion in a TPFQ ISPM.

Step 4: TPPT and TPFQ in collaboration may request experts or expert groups or organizations (e.g. IFQRG) to provide support for the evaluation.

Step 5: TPPT recommends for approval the application provided technical efficacy criteria are met for inclusion in IPPC register of treatments. TPPT through its Steward advises the TPFQ through its Steward that the treatment has been recommended for approval. If the TPPT does not recommend approval of the submission, the applicant must return to Step 2.

Step 6: The TPFQ evaluates the submission against criteria for inclusion within the TPFQ ISPM. If the TPFQ does not recommend approval of the submission, the applicant must return to Step 2.

Step 7: TPFQ recommends revision of the relevant ISPM to the SC.

¹²⁰ Introduced into the work programme by the ICPM-6 (2004).

¹²¹ Specification approved by SC 2004-11. First revision approved by SC 2005-04. Second revision approved by the SC 2010-04.

¹²² Approved by the TPFQ 2005-03 (Annex 2) and noted by the SC 2006-05, paragraph 17.

8.6 Technical Panel for the Glossary (TPG)

The Technical Panel for the Glossary (TPG) was created by the CPM-1 (2006) to harmonise phytosanitary terms¹²³. It meets regularly to discuss issues related to the Glossary of Phytosanitary Terms.

*Current tasks of the Technical Panel for the Glossary*¹²⁴

The tasks of the TPG are described in the [Specification TP 5 - Technical Panel for the Glossary](#). The TPG reviews draft ISPMs that are submitted for consultations for consistency in the use of terms and therefore reviews those consultation comments that relate to phytosanitary terminology and consistency. The TPG only reviews draft ISPMs and PTs, as the SC in May 2016 agreed to exclude DPs from this review.

*Recommendations on future revision of ISPM 5*¹²⁵

The Commission may recommend terms it wants added, deleted, or reviewed and determines priorities for the further review of the Glossary.

The Glossary should include all new terms from ISPMs and the IPPC, except that any such terms which are considered to be restricted in their use only to the document concerned should be appropriately identified.

Terms in draft ISPMs not yet approved by the (Interim) Commission may be proposed by the Secretariat as additions to the Glossary if they have a wider application. However, in other cases, they should not be included until approval of the whole ISPM (including the terms and definitions)

The authors and bodies concerned with preparing new ISPMs should bear in mind that all defined terms will appear in the Glossary. They should consider the reasons why it is necessary to include a definition of a term, and avoid as far as possible using definitions to prescribe limits to how terms are to be used (when this is properly done by the standard itself). In some cases, an explanation of how a term should be used may be preferable to a definition.

Each term and definition in the Glossary should be followed by an indication of the body which included them or, as appropriate, made the last amendment, with the year. Up to 1993, this should be specified as the FAO, from 1994 to 1999 as CEPM, and after 1999 as the Interim Commission or Commission, in accordance with the responsible authority at the time

*Process for proposals of terms to be defined or revision of terms*¹²⁶

As per the procedures of standard setting, the SC decides on the terms on which the TPG should work, based on suggestions normally made by the TPG itself or in the new drafts presented to the SC. The SC reviews the TPG proposals and decides to add them, or not, as subjects to the List of topics for IPPC standards, and requires the TPG to start working on them. Note: addition of TPG terms as subject to the List of topics for IPPC standards is decided upon by the SC, and does not require approval by the Commission.

Requests to work on new terms/definitions or to revise a definition may come from:

- the Commission

¹²³ The CPM-1 (2006) endorsed the addition of Technical Panel 5: Technical Panel for the Glossary, with a high priority. It requested the Standards Committee to report to the CPM-3 (2008) on the functioning of this TP, for evaluation paragraph 85.1. It replaced the Glossary Working Group which first met in 1993 to review phytosanitary terminology being used by national and regional plant protection organizations.

¹²⁴ Introduced into the work programme by CPM-1 (2006). Specification first approved by the SC 2006-05, with latest revision approved by the SC 2013-05.

¹²⁵ ICPM-2 (1999), paragraph 11.

¹²⁶ Approved by the TPG 2009-10 and noted by the SC 2010-05.

- the SC
- the TPG itself during its discussions of various agenda items
- other expert drafting groups
- members and possibly organizations (such as CBD, RPPOs) as part of comments on draft ISPMs
- members as part of regional workshops on draft ISPMs
- members when proposing topics for the List of topics for IPPC standards.

All such requests should be considered, even if they are eventually not added to the *List of topics for IPPC standards*.

The TPG is best placed to list requests made in comments on draft ISPMs, since it is the first group to see these comments (the Secretariat is not looking at detailed comments when compiling them).

The Secretariat is best placed to gather and compile requests from other bodies (as indicated in their reports), and send them on to TPG for consideration.

The following process is proposed:

- Before the TPG meeting, the Secretariat compiles a list of requests, made from various groups since the previous TPG meeting (but not requests made as part of comments on draft ISPMs)
- At its meeting, the TPG identifies requests coming from:
 - comments on draft ISPMs
 - its own discussions under various agenda items.
- For each request from 1 or 2 above, the TPG recommends to the SC whether to work on the term or not. A revised list of all requests from 1 or 2 and corresponding recommendations to the SC is included to the TPG report as an annex, and the executive summary of the TPG report also contains a specific request for the SC to note the terms which would be worked on, and those which would not be worked on.
- In considering the work of TPs (i.e. currently at its May meeting), the SC reviews the requests and recommendations, and decides which terms should be added to the List of topics for IPPC standards as subjects for the TPG
- After the SC meeting, the Secretariat adds these subjects to the List of topics for IPPC standards.

General recommendations on consistency across ISPMs¹²⁷

Process for consistency across ISPMs in relation to a specific term

Objective

To propose corrections to adopted standards, so that they become understandable, and to provide guidance for future ISPMs, in cases where the meaning of a term is unclear and this creates severe conflicts of meaning between ISPMs.

Detailed process

- (1) The TPG identifies a case where the use of a specific term presents a severe problem for the understanding of ISPMs, and creates severe conflicts of meaning between ISPMs.
- (2) If not already on the List of topics for IPPC standards, the TPG recommends to the SC that the term be added.

¹²⁷ Developed by TPG 2013-02, approved by SC 2013-11 (Appendix 16). Previous process approved by the TPG 2010-10 (Annex 13) and noted by the SC 2011-05.

- (3) For adopted standards, the TPG provides to the SC a detailed analysis of the use of the term throughout all ISPMs, and makes proposals as to how standards should be adjusted, separating clearly proposals relating to:
 - consistency, to be adjusted by ink amendments
 - substantial changes, to be adjusted at future revision
 - other changes needing another type of process (e.g. development of a definition for restricted meanings of the term, revision of an existing definition that uses the term).
- (4) For future standards, the TPG develops an explanation and recommendations, to be integrated in the *General recommendations on consistency*.
- (5) The SC reviews the analysis and proposals, and:
 - reviews and approves ink amendments to be submitted to the CPM for noting, and then incorporated by the Secretariat into the relevant ISPMs
 - notes the proposals for future revision (to be archived by the Secretariat until the ISPMs are revised)
 - notes the proposed recommendation to be added to the General recommendations on consistency and
 - approves or notes any other proposal as appropriate.

General recommendations on consistency of terms¹²⁸

One task of the Technical Panel for the Glossary is to review ISPMs, adopted or draft, for consistency in the use of terminology, especially of the Glossary terms. During consistency review, in particular during the review of adopted ISPMs in 2009-2012, the TPG has identified a number of points where greater consistency is needed. General recommendations on these points are set out here. They have been applied to the ISPMs reviewed, and should also be taken into consideration in drafting new ISPMs.

For the principles and the full list of recommendations, refer to the [IPPC Style Guide](#)¹²⁹.

TPG activities in relation to languages¹³⁰

Under Article XII – 5 of the IPPC, ‘The Secretary shall provide translations in the official languages of the FAO of documentation for meetings of the Commission and international standards.’

Role of the TPG in relation to translations

From the TPG Specification (Specification TP 5), the TPG should “[...] ensure that potential translation problems [for terms and definitions] are identified”. This happens in particular when terms and definitions are first developed, in English only, and TPG members identify words or phrases that may not be easy to translate. The TPG also provides recommendations on translations of terms and definitions at several stages in the Standard setting process.

In addition, “the combined membership should have expertise in all FAO languages” (Specification TP 5).

¹²⁸ TPG 2010-10, Annex 14, noted by SC 2011-05. Revised by TGP 2013-02, approved by the SC 2013-11 (Appendix 16).

¹²⁹ The list has been updated to include the recommendations by the TPG 2014-02 and noted by SC 2014-05, see <https://www.ippc.int/publications/ippc-style-guide>.

¹³⁰ Presented at the TPG 2012-10 meeting; revised by the TPG 2014-02 report, Appendix 2; noted by SC 2014-05, paragraph 161, decision 60.

Outline of the Standard setting procedure related to TPG involvement (in bold) related to translations:¹³¹

Topics

- (1) Topics are proposed to the SC to be included in the List of topics for IPPC standards.
- (2) A draft ISPM is prepared by an expert drafting group.

First consultation

- (3) The SC May approves the draft ISPM for first consultation, and the draft is posted for first consultation.
- (4) After first consultation (when it reviews consultation comments on terms and definitions and consistency in the use of terms), the TPG makes suggestions regarding translation of the terms and definitions in the draft ISPM and informs the SC that such suggestions were made. The Secretariat provides TPG suggestions to translators, to be taken into account the next time the translation of the draft ISPM is adjusted.

Second consultation

- (5) The SC-7 approves the draft ISPM for the second consultation.
- (6) Following the second consultation, the draft ISPM is revised by the steward and presented to the SC November meeting, which reviews the draft ISPM and recommends it to CPM for adoption.

CPM

- (7) The draft ISPM is translated prior to CPM.
- (8) For the draft *Amendments to the Glossary* (only), TPG members are invited to review and provide comments on the language versions of terms and definitions. The Secretariat submits TPG comments to the translators, who adjust the Amendments to the Glossary as needed before posting for CPM.
- (9) The ISPM is adopted by CPM.

LRG

- (10) For the languages where a language review group (LRG) is formed, the adopted ISPMs will be submitted to the LRG process to consider the preferred use of terminology and to identify editing and formatting errors resulting from translation. **Individual TPG members for the relevant languages are invited to participate in the work of the LRG**¹³².

¹³¹ TPG activities in relation to languages only are listed. The TPG also reviews draft ISPMs at different stages in the process in relation to consultation comments on terms and definitions, and to consistency in the use of terms.

¹³² <https://www.ippc.int/core-activities/governance/standards-setting/ispms/language-review-groups>.

8.7 Technical Panel on Pest Free Areas and Systems Approaches for Fruit Flies (TPFF)

*Tasks of the TPFF*¹³³

The tasks of the TPFF are described in the [Specification TP 2 - Technical Panels on pest free areas and systems approaches for fruit flies](#)¹³⁴.

TPFF Working Procedures

Mechanism for working and TP composition¹³⁵

The TP discussed the mechanism for working and decided that they would use a work area on the IPPC web site to share documents and to communicate by email correspondence.

After considering the composition of the panel, the TP recommended that there should be a core group of general fruit fly experts with the following expertise:

- Systems approaches for fruit flies
- Implementing PFA & ALPP for fruit flies
- Regulatory experience on fruit flies.

The TP also recommended that the core group should have experts:

- with expertise in two different genera of fruit fly
- with experience in implementing fruit fly programs
- from at least two different geographic regions
- with experience with the Standard setting process
- who are proficient in English.

The TP further recommended that specialists should be involved in TP meetings and email consultations as required, depending on the topic.

The TP recommended that, where the other technical panels set up under the SC required information on fruit flies (for example experts to draft diagnostic protocols or treatment protocols), the fruit fly technical panel could provide appropriate contacts in the relevant fields.

The TPFF was comprised of core members and extended members¹³⁶.

¹³³ Introduced into the work programme by the ICPM-6 (2004).

¹³⁴ Specification approved by SC 2004-04. First revision approved by SC 2004-11. Second revision approved by the SC 2007-05. Third revision approved by SC 2011-05. Fourth revision by SC 2012-04.

¹³⁵ TPFF 2004-09.

¹³⁶ SC 2007-05 decided to just have one category of membership. It was also decided that prior to each TP meeting, the steward and Secretariat would discuss which expertise was needed for that meeting, and would identify members with the most relevant expertise in the topics to be discussed at that meeting who would then be given priority for financial assistance in accordance with the IPPC funding policy (paragraph 26).

8.8 Technical Panel on Phytosanitary Treatments (TPPT)

The adoption of one phytosanitary treatment does not mean that others are not suitable for use in international trade¹³⁷.

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*Current tasks of the TPPT*¹³⁸

The tasks of the TPPT are described in the [Specification TP 3 - Technical Panels on Phytosanitary Treatments](#)¹³⁹.

Procedures for the production of phytosanitary treatments (PTs) were noted by the SC in 2006. The TPPT must wait for treatment submissions before they could be evaluated and adopted.

At its 2015 September meeting the TPPT reviewed the document entitled *Working TPPT criteria for treatment evaluation* which includes updated procedure for the production of phytosanitary treatments and contents guidance on treatment evaluation by TPPT.

¹³⁷ As indicated in ISPM 28.

¹³⁸ Introduced into the work programme by the ICPM-6 (2004).

¹³⁹ Specification approved by the SC 2004-11. First revision approved by the SC 2005-04. Second revision approved by SC 2010-05.

Issues associated with phytosanitary treatments¹⁴⁰

The CPM-4 (2009) discussed issues associated with technical standards¹⁴¹ and:

- *Noted* that the TPPT intends to produce criteria to assist the consideration of treatments based on historical data.
- *Underlined* its agreement with the statements below, which are in line with ISPM 28:

“Phytosanitary treatments should have a level of efficacy in killing, inactivating or removing pests, or rendering pests infertile, or for devitalisation that is both feasible and applicable for use primarily in international trade.

When considering phytosanitary treatments for submission to the TPPT, NPPOs and RPPOs should consider factors such as the effects on human health and safety, the impact on the environment and the quality and intended use of the regulated article. The scope of phytosanitary treatments does not include issues associated with product registration or other domestic requirements for approval of treatments. As appropriate these should be addressed by contracting parties using their normal domestic regulatory procedures.

Submissions are evaluated by the TPPT and, where necessary, further information may be requested to support the submission. If appropriate, submissions will be evaluated to determine if data can be extrapolated to other relevant situations.”
- *Noted* that contracting parties should consider the level of efficacy of a phytosanitary treatment in determining whether the treatment can be used as a phytosanitary measure in a specific situation. The acceptance of a treatment will depend on factors such as the pest population(s) to be controlled, the pathway, whether the PT is to be used as part of a systems approach and the probability of any remaining pests being able to escape from consignments and cause damage.
- *Encouraged* the development of phytosanitary treatments for broad groups of pests or families or genera that provide appropriate control while maintaining the quality of a wide range of commodities, where possible.

In 2012, the SC reaffirmed that the adoption of one phytosanitary treatment does not mean that others are not suitable for use in international trade¹⁴².

TPPT Working criteria for treatment evaluation¹⁴³***I. Introduction***

This document provides a description of the agreed procedure for the evaluation of phytosanitary treatments for inclusion in an International Standard for Phytosanitary Measures (ISPM). The procedures and processes documented here have been agreed to and applied by the Technical Panel for Phytosanitary Treatments (TPPT) for the evaluation of phytosanitary treatments against the requirements of ISPM 28 (*Phytosanitary treatments for regulated pests*).

It is important to note that the burden is on the submitter to provide a complete and accurate submission and information in support of their proposed treatment. This includes the appropriate statistical analysis of the research results, including efficacy.

¹⁴⁰ CPM-4 (2009), Paragraph 117. 3-6.

¹⁴¹ CPM-4 (2009), Paragraph 117. 3-6.

¹⁴² SC 2012-04, Paragraph 31.1.

¹⁴³ Approved by the TPPT 2014-06.

2. *Procedure for the production of phytosanitary treatments*¹⁴⁴

2.1 *Call for submissions for phytosanitary treatments on topics approved by the CPM*

The IPPC Secretariat issues a call for submissions for phytosanitary treatments as approved by the SC. Phytosanitary treatments are submitted by NPPOs or RPPOs for evaluation as an international standard in response to a call for submissions by the Secretariat.

The “Submission form for phytosanitary treatments” should be used by NPPOs or RPPOs to submit information on phytosanitary treatments. This information may vary, however, it will be in the “Call for treatments” letter prepared by the IPPC Secretariat.

The submission forms are collated by the Secretariat and sent to the Technical Panel on Phytosanitary Treatments (TPPT) for review.

2.2 *Evaluation of treatment submissions*

The TPPT prioritize submissions for development of phytosanitary treatments, taking into account guidance from the SC and the [Procedure and criteria for identifying topics for inclusion in the IPPC standard setting work programme](#) and using the score definitions (see this IPPC Procedural manual for standard setting). The TPPT will also take into account recommendations by other CPM bodies.

Submissions will be evaluated for their suitability as an international treatment by the TPPT in line with guidance provided in ISPM 28 (*Phytosanitary treatments for regulated pests*) and the section below. The submitted treatments will be determined to be:

- a recommended treatment for inclusion in the TPPT work programme
- a treatment requiring more information or research in order to evaluate its efficacy, or
- a treatment not recommended for inclusion in ISPM 28 and/or another ISPM.

Recommended treatments will be submitted by the TPPT to the SC with a recommendation that they be included in the work programme. For treatments requiring more information, or not recommended treatments, the NPPO or RPPO, with a copy to the contact person for the submission will be notified by the Secretariat and additional information will be requested or the reasons for the non-recommendation will be given, respectively. In addition, the submitter of treatments that are being recommended to the SC will be advised accordingly.

One expert for each treatment submission is selected as its “lead” by the TPPT to evaluate the submission.

The lead will review the data to ensure it supports the stated efficacy based on ISPM 28 (*Phytosanitary treatments for regulated pests*) and additional instructions from the TPPT if needed.

The lead completes a “checklist” and an “evaluation sheet” developed by the TPPT.

In some cases, for example where more than one submission is received for a particular treatment/commodity/pest combination, the lead may need to resolve differences between data sets and to prevent duplication of near identical treatments.

The lead may be able to accumulate further data to support a treatment submission. Where incomplete submissions are received, leads will liaise with the submitter to help progress the submission.

The treatment is then submitted to the TPPT for assessment.

¹⁴⁴ Approved by the TPPT 2005-08, Annex 1 and noted by the SC 2006-05, paragraph 24; updated and approved and included to Working TPPT criteria for treatment evaluation by TPPT 2013-07.

3. *Overview of a good research protocol*

A number of authors have published comprehensive guides on what good research methodologies should cover when developing phytosanitary treatments. Hallman and Mangan (1998), Hallman (2000), Heather (2004), and Heather and Hallman (2008) provide comprehensive overviews of sound research protocols, while Sgrillo (2002) provides some background and guidance on quantitative parameters for phytosanitary measures.

From these papers and ISPM 28 it can be surmised that a sound research protocol should ensure that:

- There is an unambiguous description of the target pest and commodity, and the nature of the association of the two in trade and how this relates to the mode of action of the treatment.
- The specimens are identified to the species level by a specialist, including detailed information of how the species was determined. Refer to ISPM 8 (section 2.1 Pest records) for further guidance.
- With regards to voucher specimens, submitters should ensure to preserve sample specimens in appropriate media for future reference.
- The condition of the target pest, host and environment at the time of testing is equivalent to the likely condition or range of conditions found in trade. For example, laboratory colonies of test pests should be representative of what is most likely to be encountered in trade and should be replenished with wild types periodically.
- The effectiveness of the treatment is tested against the most tolerant life stage or condition of the target pest likely to be found at the time of treatment application in trade.
- For generic treatments, effectiveness of the treatment is tested against the most tolerant species within the target group.
- When doing replicates or when repeating laboratory trials for comparison in a different location or time, treatment conditions should be as similar as possible on each occasion, such as commodities, load factors, testing equipment, experimental protocols, etc.
- The methods used to measure the experimental parameters of the treatment are appropriate and that records are provided with submissions. This may include calibration of equipment and records indicating, over time, temperature ranges, treatment duration (including heat up, cool down and dwell time), dosimetry, etc.
- The treatment outcome is appropriate to the phytosanitary needs of trade.
- Statistical analyses are completed using the most appropriate methods. Experts in statistics should be consulted.
- The publication or reporting of the research outcomes is suitably transparent for assessment by regulatory organisations.

3.1 *The treatment end-point is suitable for international trade*

As stated in ISPM 18 (2003) but which might be applicable to all treatments: “The objective of using irradiation as a phytosanitary measure is to prevent the introduction or spread of regulated pests. This may be realized by achieving certain responses in the targeted pest(s) such as:

- mortality
- preventing successful development (e.g. non-emergence of adults)
- inability to reproduce (e.g. sterility), or
- inactivation.”

Selecting a suitable treatment end point needs to take into account the cost-effectiveness of the treatment, considering both the cost of applying and verifying the treatment and the cost-impact of any damage to treated-product quality.

The following should be taken into consideration when deciding on a suitable treatment end-point:

Treatments causing mortality of the exposed life-stage(s)

This treatment outcome should ensure no live pests are found in the treated product on inspection at the destination country. However consideration should be taken of the method used by the importing country to verify pest mortality. While successful treatments may result in pest mortality, it may take several days or more for the target pests to cease metabolic activity (see Philips *et al.* 2015). Pests that are moribund but still alive after treatment may be incorrectly interpreted as treatment failure when using chemical mortality tests to verify treatment success.

Treatments preventing successful development to the next metamorphic stage

Treatment of the target pest in a commodity while not killing the life stages present would prevent the pest developing further. For example if only eggs occur in the treated commodity, no larvae would be detected after treatment. If pupation occurs in the treated commodity then treatment would prevent the eclosion of adults. If adults typically occur in the product then prevention of reproduction (e.g. egg laying) would be the target.

Treatments preventing adult emergence

While immature life stages present in the treated product may survive the treatment, they would be unable to complete development and emerge as adults from the commodity or from a life stage that has left the commodity. It is therefore possible that live immature life stages of the target insect may be present in the treated product during phytosanitary inspection. There may currently be no simple methods available which can be used to identify whether or not treatment has been carried out correctly by testing the recovered insect. (See [section 3.2](#) of this section.)

This requirement is the ‘traditional’ criterion for treatment efficacy for irradiation treatments against tephritid fruit flies and also, at least in some jurisdictions, other quarantine treatments such as cold disinfestation and fumigation. In the case of tephritid fruit flies, preventing adult emergence could be considered the desired response required for regulatory purposes because it prevents the emergence of adult flies that could be trapped and trigger regulatory actions (PT 7: Irradiation treatment for fruit flies of the family Tephritidae (generic)).

Treatments causing sterility of target insect pests

In this case treatment of the life stages present in the commodity would not prevent development but would render any surviving adults reproductively sterile (e.g. unable to produce viable progeny).

As above there is the likelihood that live immature pest life stages will be found in treated product. However an additional complication is that live, but sterile adults may escape into the importing locality and be trapped thereby triggering exotic pest incursion activities and restrictions. Until simple and reliable techniques are readily available with which to identify insects found in quarantine traps as being treated and sterile, it may be difficult for importing authorities to accept sterility as a suitable end-point for a phytosanitary treatment.

Researchers would need to prove to the satisfaction of importing authorities that insects surviving treatment will be sterile, and will not be able to survive long enough or migrate far enough to be a problem in existing surveillance systems.

3.2 Presence of live adult insects after irradiation phytosanitary treatments

Members of the TPPT expressed concern about possible difficulties that might occur for quarantine authorities approving new quarantine treatments whose efficacy was based on lack of successful reproduction of adults rather than acute mortality of pests. The two approaches achieve the same end result in that quarantine security is satisfied –no fertile insects will escape imported fruit and invade the local importing region. The differences are that when a treatment is based on prevention of reproduction there may be live adults in or near to the treated product, which would cause significant concern to importing authorities even though the irradiation treatment would have caused sterility of those insects.

Background

ISPM 18 calls for a precise description of the response required for efficacy. For example, where the required response is inability to reproduce it gives a range of specific options, such as complete sterility, limited fertility of only one sex, egg laying or hatching without further development, and sterility of the F1 generation.

Typically, the most advanced developmental stage of the insect occurring in the commodity is the most radiotolerant when the measure of efficacy is preventing further development or reproduction (Hallman *et al.* 2010). In the case of tephritid fruit flies, preventing adult emergence is the desired response required for regulatory purposes because it prevents the emergence of adult flies that could be trapped and trigger regulatory actions (ISPM 28, Annex 7). When the insect pupates in the host, preventing adult emergence may require an excessive dose, so prevention of development of the F1 generation is the preferred measure of efficacy (Hallman *et al.* 2010). Thus, the most tolerant stage when all stages could be present in shipped commodity would be the adult, and in the vast majority of arthropods with notable exceptions being tephritid fruit flies and Lepidoptera that pupate off the shipped commodity, adults could be present. These adults (although unable to reproduce) will most likely be alive for some time after irradiation, so for irradiation to be considered as a viable phytosanitary treatment plant protection organizations must develop protocols to ensure that the discovery of live adults after proper irradiation is not an obstacle to importation. Protocols have been developed by countries that import irradiated commodities (New Zealand and USA sources).

There is no easy procedure available to identify whether or not an insect is irradiated or is sterile or fertile, so if such adults were detected (e.g. trapped) in the importing country, subsequent costly regulatory actions or pest impacts may eventuate. In each target pest and host combination the probability of the unwanted detection needs to be considered.

Likewise if insects may be considered vectors of quarantined disease-causing agents it may not be prudent to accept live insects after irradiation.

Pests such as bacteria, fungi, viruses or phytoplasma that may be vectored by insects require irradiation doses 10 to 100 times greater than most insect life stages to remove viability. Therefore irradiation treatments suitable for international trade are unlikely to remove the ability of a sterile but otherwise unencumbered irradiated pest to vector other regulated pests if they are able to do so normally.

Considerations

It needs to be understood that, with the exception of tephritid and Lepidoptera pests, many pest arthropods, when treated with irradiation for quarantine purposes, may be at the adult stage. This applies to thrips, mealy bugs, scales, some Coleoptera and mites, among others. The issue of the likelihood of the post-treatment presence of live, though sterile, adults can be addressed by normal and accepted certification of treatment completion and data supporting sterility. The second issue i.e. the likelihood of such adults escaping from the fruit and entering exotic pest monitoring pathways or vectoring other regulated pests needs to be addressed. Published literature suggests that the numbers of adults surviving treatment for the length of time required to fall into pest monitoring traps or vector a pest in the “new” country is negligible as is the likelihood of easy movement (e.g. flight).

Conclusions

Published research shows clearly that irradiation of insects at all life stages likely to found infesting horticultural commodities, may be an efficient quarantine treatment to prevent the introduction or spread of regulated pests.

The main concern is the survival of adults, although sterile, sufficiently long enough to be detected (e.g. travel into exotic pest detection traps or vector other regulated pests). Evidence to date suggests that surviving adults are rare but if they do occur they are much weakened and short lived. Researchers are encouraged to determine the viability of surviving adults to address these concerns.

3.3 *Experimental conditions are consistent with the conditions in international trade*

Treatment parameters should be tested to ensure changes in conditions that may be found in international trade do not unexpectedly reduce the effectiveness of the treatment. Evidence should therefore be provided that shows how treatment efficacy may be affected when one or more treatment parameters are altered. Examples to consider include but are not limited to the following:

- **Commodity and/or pest temperature during treatment:** under trading conditions the temperature of the commodity or target pest may vary over the duration of the treatment. The effect of such temperature changes on treatment efficacy should be understood.
- **Commodity and/or pest temperature pre- or post- treatment:** pests may become more tolerant of a treatment if their temperature before the treatment is altered (Jamieson *et al.* (in press)). The rate at which pests are returned to normal temperatures after treatment may alter the effect of the treatment.
- **Water content of commodity:** changes in commodity water content may reduce treatment efficacy (e.g. by reducing treatment penetration or increasing pest tolerance).
- **Commodity density or chemical composition:** the density or chemical composition of the commodity may reduce treatment efficacy (e.g. by reducing treatment penetration or chemical reactivity).
- **Hypoxic or aerobic conditions:** the presence or absence of oxygen may reduce treatment efficacy (e.g. by changing pest metabolic or respiration activity).
- **The effect of treatment conditions on life-stage tolerance to the treatment:** The relative tolerances of different pest life stages may change as one or more environmental or treatment conditions change. For example different life stages may have different mortality responses to increasing treatment temperatures (Fonoti and Tunupopo 1997). Testing LST should be carried out to the targeted conditions of the treatment.
- **Commodity packaging:** commodity packaging should be consistent with packaging found in international trade.

3.4 *Use of historical records*

Historical evidence can be used to support the general effectiveness of a treatment that has been in use for many years.

4. *General Considerations when Calculating the Level of Efficacy Achieved by a Treatment Schedule*

The panel has recommended a number of principles that they should apply when calculating the level of efficacy achieved by a treatment schedule at the 95% confidence level, based on the total number of target pests treated. Further information on the calculation of the level of efficacy is provided in a publication by Couey and Chew (1986). These agreed principles include:

The level of mortality in the controls must be accounted for when calculating treatment efficacy from counts of dead treated pests. The recorded mortality of treated target pests should be adjusted for natural mortality recorded in controls e.g. if there is a 10% level of mortality in the control sample, 10% of the deaths in the treated sample should be attributed to causes other than the treatment.

Greater than expected natural mortality levels (in controls) should be treated with care because they may indicate a target pest population under stress. A population under stress may be more susceptible to the treatment than a natural population. If control mortality is high, evidence should be provided that either indicates pest susceptibility to the treatment is no greater than normal populations or that high control mortality reflects normal conditions.

- Percentage mortality of treated target pests should be adjusted for mortality in the control by the following formula: $Y_a = 100\% - [(X - Y)/X](100\%)$, where Y_a is the adjusted percentage

- surviving in the treated cohort, X is the percentage surviving in the control and Y is the percentage surviving in the treated cohort (Abbott 1925).
- Greater than expected response levels in controls may indicate a target pest population under stress that may be more susceptible to the treatment than a natural population. If control response is high, evidence should be provided that either indicates pest susceptibility to the treatment is no greater than normal populations or that high control response reflects normal conditions.
 - Sample sizes and repetitions should be sufficient to account both for natural variation and achieve significant regressions when extrapolating treatment efficacy. A small number of treatment repetitions can, on analysis, result in statistical errors giving meaningless conclusions (if the SD at 95% is greater than the mean, the lower (worst case) result may be a negative dose e.g. 10 ± 12 gives a range from -2 to 22).
 - When the population of treated pests is estimated from control pest populations, the estimation must be based on a statistical analysis of the controls. Where possible, control data should not be grouped together, but should be recorded for each individual test commodity or target pest. Pseudo-replication¹⁴⁵ should be avoided or minimized, as much as possible.
 - Researchers need to apply the same statistical rigour to control data as they do to treatment data. Where the infestation rate for each regulated article in the control is known, the estimated treated regulated article infestation rate would be:

$$\text{Average per treated regulated article} = \mu - (\text{STD} \times 1.645)$$

- Where the control infestation rate is based on the mean of grouped commodities, as the number of controls increases so does the level of confidence in the estimation of the population mean. A suitable formula for estimating the average number of exposed pests per treated regulated article would therefore be:

$$\text{Average per treated regulated article} = \mu - (\text{STD} \times \sqrt{(1+1/r)})$$

Note: **r** is equal to the number of control replicates used to estimate the mean (μ) and standard deviation (**STD**) of the control means.

4.1 Description of treatment efficacy

The TPPT noted the need for clarity on the description of treatment efficacy that is currently provided in ISPM 28. Phytosanitary treatments for regulated pests. The panel considered it important that treatment efficacy be clearly described to avoid confusion with other similar terms in common use such as “dose”, “efficacy”, and “lethal dose”. The term “effective dose” or “ED” as currently used in ISPM 28 (Phytosanitary treatments for regulated pests) should not be replicated in other ISPMs as it may create confusion. Instead, alternative and more clarifying wording should be used to communicate the desired efficacy of a treatment, such as¹⁴⁶:

¹⁴⁵ Pseudoreplication is used to test for treatment effects with data from experiments where either treatments are not replicated (though samples may be) or replicates are not statistically independent. The error described by this term arises when treatments are assigned to units that are subsampled and the treatment F-ratio in an analysis of variance (ANOVA) table is formed with respect to the residual mean square rather than with respect to the among unit mean square. The F-ratio relative to the within unit mean square is vulnerable to the confounding of treatment and unit effects, especially when unit number is small (e.g. four tank units, two tanks treated, two not treated, several subsamples per tank). The error is avoided by forming the F-ratio relative to the among unit mean square in the ANOVA table (tank MS in the example above). Pseudoreplication, as originally defined, is a special case of inadequate specification of random factors where both random and fixed factors are present: <http://en.wikipedia.org/wiki/Pseudoreplication>.

¹⁴⁶ SC 2015-05 agreed to the proposed wording. TPPT 2015-09 proposed ink amendments and CPM-11 (2015) noted them for the then 19 adopted annexes to ISPM 28. Following, the ink amendments were incorporated into the phytosanitary treatments.

There is 95% confidence that the treatment according to this schedule [kills|inactivates|removes|renders infertile|devitalizes] not less than 99.9963% of [the treated pests].

For the example used above (for *Bursaphelenchus xylophilus*) this would look like the following:

There is 95% confidence that the treatment according to this schedule kills not less than 99.99683% of all life stages of *Bursaphelenchus xylophilus*.

5. *Choosing Surrogate Species for the Development of Phytosanitary Treatments*

Note: In the context of the TPPT, discussion on choosing a surrogate species is confined to the use of insect pest species to substitute for target species when the target species is difficult or impossible to obtain or use in research on developing a phytosanitary treatment.

Target species: The species that is of quarantine concern to an importing country.

Surrogate species: The species that is tested instead of the target species.

A suitable surrogate species may be as tolerant as or preferably more tolerant than the target species and must respond as closely as possible to the treatment as the target species. When a surrogate species is used in developing a phytosanitary treatment the TPPT needs to see justification that the surrogate species is a suitable substitute for the target species.

The following attributes may be used in providing such a justification. Similarity between the target species and the surrogate species in:

- Order, Family, Genus, Species (different strain, sub-species, variant, etc.) [“taxonomic distance”]
- Host (i.e. target product) and host range
- Life history, phenology, size
- Feeding regime
- Reaction to treatment
- Tolerance to treatment (preferably less tolerant at same temperature, duration of exposure, dose concentration, etc.) [“toxicologically representative”]
- Habitat type (e.g. tropical, temperate)
- Level of damage to target product and the part/s of target product damaged
- Published supporting scientific literature and/or existing international / bilateral approvals.

7. *Use of Extrapolation to Estimate Phytosanitary Treatment Efficacy*¹⁴⁷

ISPM 28. Phytosanitary Treatments for Regulated Pests, requires that where possible the level of efficacy of a phytosanitary treatment be indicated and quantified or expressed statistically. Where experimental data are insufficient, other evidence supporting efficacy (i.e. historical experience) should be provided. Furthermore, it should be documented that the efficacy data were generated using appropriate scientific procedures, including where relevant an appropriate experimental design. The data supporting the treatment should be verifiable, reproducible, and based on statistical methods and/or on established and accepted international practice.

The efficacy of a phytosanitary treatment can be determined by exposing large numbers of the most tolerant stage of the pest infesting the commodity to the treatment with the target dose extrapolated from the dose - response relationship. Treatments are often approved by national plant protection organizations of importing countries based on treatment efficacy when large numbers of pests in the most tolerant stage are treated with none or acceptably few reaching the defined survival threshold.

¹⁴⁷ Agreed by the TPPT in its 2015-08 meeting.

Extrapolation has been used to estimate the dose that will provide a high level of treatment efficacy, >99.9%, and sometimes up to 99.9968% (“probit 9”), from dose-response models. Extrapolation in a statistical sense is estimation outside of the observed range, including observations within the observed range but with insufficient sample size; e.g., a sample size of 200 individuals is inadequate to serve as an observation at treatment levels that provide >99.9% control.

Box Draper (1987) famously wrote, “Essentially, all models are wrong, but some are useful.” They clarified that the practical question is how wrong they can be while still being useful. Regression analyses (most often probit analysis) are often used to analyze dose-response data and estimate doses to achieve specific levels of response. However, these dose estimates are typically in the 50% range in order to compare treatments and options, and in that range they are quite useful. These models may be not well suited to estimate extreme levels of response such as those demanded of phytosanitary treatments, and it is open to inquiry how useful it might be for this purpose. It is not so much that a more useful model might exist and should be sought but whether if what is being asked of any such model might be feasible.

A variety of statistical methods have been used for extrapolating phytosanitary treatment doses, such as probit analysis, other forms of regression analysis, and kinetic models. Markov chain Monte Carlo has been used, but in biology it is mainly used for computational biology, the degree of complexity of which has not been available at the same level for research into phytosanitary treatments. Probit analysis is often suggested as the preferred model for biological assay of insects. Although different probability density functions (normal, logit, Gompertz) give largely the same estimates for most of the dose-response curve, where they differ is precisely where it is important for phytosanitary treatments: at the extremes.

Schortemeyer *et al.* (2011) reviewed many papers on phytosanitary treatment development for fresh fruits and vegetables and concluded that extrapolations based on dose-response analyses from these studies do not “generally lead to confidence in the outcomes”. They concluded that “the analysis of carefully designed dose-response experiments may be used to” extrapolate to appropriate treatment doses. Their suggestions for careful experiments that would be more successful than research they reviewed can be insinuated from problems that they identify in published studies estimating mortality, which are the lack of:

- (1) preliminary studies to indicate doses “necessary to achieve interpretable results”
- (2) transparency in selection of numbers and levels of treatment and sample size
- (3) correction for mortality in the untreated controls
- (4) information on model selection or fit of data to the model
- (5) role of confidence limits in dose extrapolation
- (6) discussion on how far results can be meaningfully extrapolated

However, many of the studies Schortemeyer *et al.* (2011) found lacking did, indeed, address the criticisms that they levelled, so it is not readily evident where general improvements could be made that would yield more confident extrapolations.

West & Hallman (2013) examined 11 dose-response studies coupled with large-scale tests where a few survivors occurred to use those data points to compare the accuracy of different analyses in extrapolating to high-levels of control (Table 1). Large-scale studies with a few survivors are especially useful for studying the accuracy of extrapolations because the lack of 100% efficacy avoids the uncertainty of overkill associated with large-scale testing when there are no survivors. Also, it provides an estimate of accuracy that is independent of statistical fit of the data to a model; i.e., accuracy of extrapolation need not be dependent on fit to model.

One pertinent observation from Table 1 is that discrepancy from the closest model extrapolation varied from -18 to +48%, which may be excessive error for supporting extrapolation of doses required for phytosanitary treatments to fresh commodities, which often have narrow tolerance ranges above doses required for efficacy. In any case, from a phytosanitary perspective over-treating is an acceptable

error, because although it may result in unnecessary expense and increase the risk of damage to the commodity it would provide quarantine security, while under-treating may not. The least-close extrapolations in Table 1 had, of course, greater discrepancies. Also, no one model best predicted extrapolated doses, indicating that it might be difficult to recommend one model to support extrapolation. Of course, the studies examined might not be ideally designed for purposes of extrapolation and perhaps better experimental designs can be devised. Non-perishable commodities, such as wooden pallets and durable goods, may very well tolerate treatment severities in excess of the minimum needed to control quarantine pests, and in these cases upper range dose estimates of extrapolations may be applied as phytosanitary treatments.

Unfortunately dose-response analyses might not accurately point to a confirmatory dose that should be tried and researchers are urged to pick a confirmatory dose that will result in the least severe treatment feasible taking into consideration possible detrimental effects to the commodity, the difficulty and cost of conducting the confirmatory testing, and the level of urgent need for the treatment. Detailed knowledge of the phytosanitary situation including pest and commodity reactions to the treatment, logistics of commercial application, and ramifications of overtreatment will help guide dose selection in confirmatory testing. It is also worth noting that the result of dose-response analysis should provide a high level of confidence (e.g. 95%) that the treatment will achieve the required level of protection represented by the upper dose confidence level.

Table 1. Dose extrapolation, best-fitting model, and Pearson χ^2 from large-scale studies that resulted in a very small percentage survival (West & Hallman, 2013)

Dose tested	Observed control (%)	Model that fit best*	Dose extrapolated	% discrepancy	Pearson χ^2
65 min	99.9973	Skewed logit	44 min	+48	0.0
22 d	99.9921	Skewed logit	21 d	+4.8	4.1
14 d	99.9990	Skewed logit	17 d	-18	3.5
12 wk	99.9940	Probit	11 wk	+9.1	3.0
+9 d	99.9993	Logit	11 d	-18	19
12 d	99.9991	Gompertz	13 d	-7.7	46
30 min	99.9994	Logit	32 min	-6.3	15
7 d	99.9994	Logit	6 d	+17	7.0
20 min	99.9988	Skewed logit	16 min	+25	8.2
14 d	99.9999	Skewed logit	17 d	-18	3.5
40 g/m ²	99.9990	Gompertz	38 g/m ²	+5.3	8.3

*The following models were tested: probit, logit, skewed logit, Gompertz

8. *Probit 9 and Efficacy Standards for Phytosanitary Treatments*¹⁴⁸

Phytosanitary measures must assure a level of security appropriate to preventing invasive species from becoming established in new areas. The level of security of phytosanitary treatments has often been set at the irrational number $\approx 99.99683\%$ since 1939. This number is “probit 9” and was chosen from a then newly developed statistical model, probit analysis, designed for transforming data from a normal, sigmoid distribution into a straight line for ease of analysis in the pre-computer age. The idea is to “stretch” both tails of the normal, bell-shaped curve until they become straight. In this scheme probits (from “probability units”) 5, 6, 7, 8, 9, 10, and 11 when expressed as percentages are 50, ≈ 84.14 , ≈ 97.72 , ≈ 99.86 , ≈ 99.997 , ≈ 99.99997 , and $\approx 99.9999999\%$, respectively.

¹⁴⁸ Agreed by the TPPT in its 2015-09 meeting.

It is not clear how Probit 9 became a de-facto efficacy standard for many phytosanitary treatments. Landolt *et al.* (1984) find no reason for setting the efficacy level at probit 9 or even why mortality is used as the criterion for phytosanitary treatments (except for irradiation) instead of other criteria that would closer reflect biological reality. For example, they state that in an unpublished 1938 document confirmatory testing was decided at no survivors of 10,000 insects tested, but was later raised to probit 9 and requiring 75-100 thousand or more insects treated in a subsequent unpublished document with no reasons given for either decision.

Robertson *et al.* (1994) bemoan the fact that the probit 9 requirement, including attending assumptions of, a) complete mortality as the measurement of efficacy, and b) fit to the probit model, has undergone no revision since it was first codified in 1939 despite substantial progress in understanding pest risk potential.

Authors such as Landolt *et al.* (1984), Baker *et al.* (1990), Vail *et al.* (1993), and Mangan *et al.* (1997) have argued that treatment efficacy decisions should be based on the remaining level of phytosanitary risk of the entire production system not the level of mortality achieved of the phytosanitary treatment. That proposal presents a challenge for treatments designed to be geographically broadly applicable such as those adopted by the IPPC because the level of risk may vary considerably among prospective exporting areas. For example, Mangan *et al.* (1997) estimate that even a phytosanitary treatment at the probit 9 level might be insufficient to prevent a mating pair of Mexican fruit fly, *Anastrepha ludens*, from entering the US via shipments of fruit from Mexico.

The possibility that probit 9 level security for phytosanitary treatments would be insufficient to prevent infestation from invasive species gives pause to attempts to lower the efficacy requirement for treatments that apply over broad geographic areas that may include some that are highly infested with quarantine pests. Therefore, studies that show support for requiring such a high level of efficacy deserve further scrutiny. In Mangan *et al.* (1997), the percentage of *A. ludens* infested grapefruit picked off trees during the entire harvest period in orchards in Tamaulipas, Mexico, in two years was as high as 6.5% (mean puparia/infested fruit = 5.0), and it was estimated that in 4 of 9 instances a probit 9 level treatment would be insufficient to prevent the survival of two insects to the puparial stage using the maximum pest limit equations developed by Baker *et al.* (1990). Fruit lot size for these calculations was one truck load of 120,000 grapefruit. Furthermore, many other pests, such as mites, thrips, and mealybugs, may occur in large numbers in harvested fresh commodities and thus not be controlled to the required level of security by a probit 9 treatment.

Data from Mangan *et al.* (1997) highlight the fact that commodities such as fresh fruits cannot be infested to levels of > 3 % before there is an unacceptable risk of pest establishment after a probit 9-level treatment. Likewise Baker *et al.* (1990) calculate that infestations not greater than 0.4 % may be required under some scenarios to assure quarantine security after a probit 9 level treatment. Therefore, phytosanitary treatments designed for broad application should not be “stand-alone” but be supported by pre-treatment infestation limits. National plant protection organizations from importing countries may also require pre-harvest controls to reduce infestation levels.

Caveats for the paper by Mangan *et al.* (1997) are that only survival to the puparial stage is used with many steps to go before an invasive species would be at risk of establishment; therefore, the risk of establishment seems higher than it actually is. It also assumes that both puparia would result in a sexual pair of adults that would end up together after the load of 120,000 grapefruits was distributed. Furthermore, it assumes that the distribution models accurately predict survival, which may have a low level of accuracy at the extreme level of security demanded of phytosanitary treatments. However, model accuracy could go either way; i.e., be less than reality or more. Also on the side of caution the data used probably underestimated infestation levels, as sampling techniques for fruit flies and likewise other pests miss some of them (Gould 1995).

Regardless, the levels of infestation considered by Mangan *et al.* (1997) that resulted in post-treatment risk of survival greater than those normally considered acceptable for fresh commodities and tephritids and should not be considered normal for international trade, although they sometimes do occur

(APHIS 2002). The TPPT concludes that phytosanitary treatment schedules should not be designed for worst-case scenarios that may be imagined, but scenarios of reasonably high risk. Furthermore, members are advised that phytosanitary treatments might not be sufficiently efficacious under all trading situations such as where infestation levels or volumes of trade are high, nor should exporters trade highly infested fresh commodities.

A more pertinent question for treatment research is whether confirmatory testing at the probit 9 level with a standard confidence level of 95%, which requires that ~93,600 insects be treated with no survivors yields a more useful level of confidence than testing only 30,000 insects as is approved as an APPPC (2004) Standard. A probit 9 requirement results in an increase in confidence of 0.0068% compared with 30,000 insects treated with a cost of treatment research that is more than tripled. Although the difference in efficacy seems slight the difference in treatment severity could be significant. For example, Hallman and Martinez (2001) found that an irradiation dose to prevent adult emergence of 3rd instar *A. ludens* in grapefruit that satisfied 30,000 insects treated was 17 % less than the dose required for probit 9.

The TPPT does not recommend any specific level of efficacy but encourages members to take into account factors that affect the risk of quarantine pests occurring in and surviving shipments, such as infestation levels, volumes traded, and other factors affecting survival and establishment, as is discussed by previous authors (Landolt *et al.* 1984, Baker *et al.* 1990, Vail *et al.* 1993, Mangan *et al.* 1997). Additionally, the TPPT does not propose to change the way efficacy is measured (mortality except for irradiation treatments) or recommend specific models for analysis of data.

9. General Considerations for Heat treatments

The panel considered issues associated with treatments based on temperature, taking into account the work of Hallman and Mangan (1997). In 2009 the panel recommended a number of principles that should be applied when evaluating temperature treatments for adoption as international standards (outlined below).

Mortality assessments

When assessing mortality, any larvae that are found alive should be considered survivors whether or not they subsequently fail to pupate or survive to adults. This takes account of the fact that in practice on phytosanitary inspection any live insect found will be considered a survivor.

Genotype of insect

It is possible that laboratory-bred colonies of insects may become more susceptible to temperature-based treatments over time. The panel is not aware of any research having been undertaken to demonstrate whether this is an issue in reality. The panel considers that as long as the colonies used in the research have been established or reinvigorated before the research, issues such as these should not be considered significant subject to research showing otherwise.

Pre-treatment acclimation

Insects may be less susceptible to temperature treatments depending on the conditions they are exposed to immediately prior to treatment. The panel considers that where this may be an issue, pre-treatment requirements should be included in any recommended treatment schedule.

Commodity variability

To provide confidence that temperature treatments are applicable internationally, host material used in research should be sampled from as wide a geographic area as possible and unexpected results should be considered with care.

Scale of treatment application

The panel should consider any possible reduction in effectiveness of temperature treatments that may occur when treatments are scaled up and applied in commercial conditions.

Rate of temperature change

Where the rate of temperature change of the commodity may be considered significant to the effectiveness of a temperature treatment, this should be specified in the treatment schedule.

Determining the most tolerant life stage

The most tolerant life stage should be determined using hosts and pests under normal conditions of infestation and treatment parameters, using a common measure of efficacy. If conditions are different, it should be demonstrated that these differences are equivalent to normal conditions. For instance, if artificial inoculation is used, this should be similar to the host and pest found in nature, e.g. depth in commodity and level of infestation. When developing mortality curves, life stages should be exposed to as close to the target temperature as possible for different periods.

Most thermotolerant stage of Tephritidae

The purpose of this annotated bibliography is to evaluate the literature on most thermotolerant stage among tephritid eggs and larvae. Any study that compared at least two stages with discriminating lethal temperatures was included. Studies or parts of studies at lower temperatures where survival was considerable were not included. Where raw data are given the conclusion regarding most tolerant stage is based on the raw data regardless of what the statistical analysis (if any) showed; in any case raw data and analyses largely agreed.

Conclusion. The egg stage was the most thermotolerant or the next most thermotolerant in studies done with insects reared in fruit using a common measure of efficacy. The egg itself can vary considerably in thermotolerance depending on age and usually increases in thermotolerance as it develops.

Analysis. It is not possible to compare all of the studies as they are presented because the methodologies and measures of efficacy differ considerably. Many of the studies use end points that require fewer steps for the egg to achieve survival than the 3rd instar; the egg had only to hatch while the 3rd had to pupariate, which involves more development. A common end point should be used, such as survival to a stage which can be detected by inspectors.

Many of the studies were done in vitro where stages were heated under the same conditions; this arrangement may artificially favor egg tolerance. Because eggs are always laid very near the surface and late instar larvae are often deep in the fruit some late larvae would heat up slower allowing time for some accommodation to the temperature increase and generation of heat-shock proteins (which offer protection against heat and other threats) compared with eggs. Thomas and Shellie (2000) found survival of 3rd instar *A. ludens* increased when they were heated to lethal temperatures more slowly. However, in commercial practice with heated air treatments the entire load heats up relatively slowly allowing adaptation to occur in eggs as well. That is not the same with hot water immersion treatments where the heat reaches the egg stage rather quickly.

In some of the studies done in fruit 3rd instars were reared on diet for several days before being inserted into the fruit. This technique has been used with much phytosanitary research, not only heat, but there are only two heat studies with one tephritid (*A. ludens* in mango and grapefruit) that compare efficacy using this technique vs. efficacy using 3rd instars reared naturally in fruit and both find that it is much easier to kill 3rd instars reared on diet and inserted into fruit than those reared in fruit (Shellie and Mangan 2002, Hallman (unpublished); see page 121 of Heather and Hallman (2008) for interpretation of the former).

Operational considerations may tend to favor concentration of treatment efficacy on the 3rd instar because the 3rd instar is the stage likely to be found by inspectors and it is the stage of those present in fruit closest to the adult, thus, closest to successful colonization.

One of the most illustrative studies is a PhD thesis (Corcoran 2001) that was not published in any journal, peer-reviewed or not. It is illustrative because it is the only study where results using in vitro and in-fruit techniques can be compared, thus, shedding light on the relevance of the abundant heat in vitro studies in the literature. Unfortunately raw data are not given and the only results are LD50 and

LD99 values with 95% fiducial limits, and fit of the data to the probit model is not given. In any case, for the one fly comparing in vitro vs. fruit (*Bactrocera papayae*) there were no differences in thermotolerance among the egg (60% developed) and the three instars as measured by pupariation when the stages were reared and treated with heated air in mangoes. When the four stages were immersed in 46°C water and efficacy measured as pupariation the 1st instar was more tolerant than the 3rd which was more tolerant than the egg and 2nd. That study with one species indicates that in vitro research using the same endpoint overestimates 1st instar tolerance considerably and 3rd instar tolerance to some degree. Of course, it is not prudent to conclude for all tephritids based on one study with one species.

Nine studies using stages reared from the egg in fruit and measuring a common endpoint (the ideal situation) give results for six species of *Bactrocera* spp. and *Ceratitis capitata* (Table 1). These studies are the most similar to the actual situation facing phytosanitary heat treatments. All of the studies were done in Australia using heated air and seven of nine were done with mangoes. In seven of nine studies (78%) the egg was the most thermotolerant stage (or of equal tolerance as other stages that were among the most tolerant in that study). In four of seven studies (57%) the 1st instar was most (or equally) tolerant (1st instar was not included in all 9 studies). In four of nine (44%) the 3rd instar was most (or equally) tolerant. In one of seven studies (14%) the 2nd was most (or equally) tolerant. In the two studies where the egg was not the most tolerant stage it was the next most tolerant. Because of the difference in application of heated air vs. hot water immersion (rapid heating of egg stage in hot water immersion) the most tolerant stage for hot water immersion could be different.

Table 1. Summary of thermotolerance studies among stages of Tephritidae that used common measures of efficacy among the stages and reared and treated the stages within fruit.

Species	Fruit	Relative tolerance	Reference
<i>Bactrocera aquilonis</i>	mango	1 st > egg > 3 rd > 2nd	Corcoran (2001)
<i>Bactrocera cucumis</i>	zucchini	Egg > 1 st > 2 nd > 3rd	Corcoran et al. (1993)
<i>Bactrocera fraunfeldti</i>	mango	1 st = egg > 3 rd > 2 nd	Corcoran (2001)
<i>Bactrocera jarvisi</i>	mango	1 st = 3 rd > egg > 2nd	Corcoran (2001)
<i>Bactrocera papayae</i>	mango	All same	Corcoran (2001)
<i>Bactrocera tryoni</i>	mango	Egg > 3 rd > 2 nd > 1st	Heard et al. (1992)
<i>Bactrocera tryoni</i>	mango	3 rd > egg > 2 nd > 1st	Heard et al. (1992)
<i>Bactrocera tryoni</i>	mango	Egg = 3rd	Heather et al. (1997)
<i>Bactrocera tryoni</i>	tomato	Egg > 1 st > 2 nd > 3rd	Heather et al. (2002)
<i>Ceratitis capitata</i>	mango	Egg = 3rd	Heather et al. (1997)

10. General Considerations for Heated Air Treatments

Heated air treatments used as phytosanitary measures for pests on fresh fruit and vegetables have historically been divided into two main categories, vapour heat treatment (VHT) and high temperature forced air (HTFA) (Hallman and Armstrong 1994). Other names have been used for both; for example, VHT has been called moist heat or heat sterilization in some older literature, while HTFA has been called forced hot air, forced moist air, dry heat, and hot dry air. Inconsistent nomenclature in the literature has resulted in confusion, and readers must refer to the methodology used in the research to determine to which group a heated air treatment really belongs.

Heated air treatments distinct from VHT and HTFA and used for products other than fresh fruit and vegetables include heat with no added humidity at 80-100°C applied to soil and durable products able to tolerate the high heat and steam sterilization (saturated air at 100-120°C, sometimes under pressure) to control pests and disease organisms in straw and other durable non-food items or to sterilize contaminated or waste material.

VHT was first used as a commercial phytosanitary treatment in 1929 to disinfest grapefruit of *Ceratitis capitata* in Florida. Large rooms were packed with fruit, and heated air near saturation was pumped into the room for 14-16 hours until the entire load reached temperatures lethal to *C. capitata* larvae

and eggs. Its use expanded to other countries, pests, and commodities until fumigants came into widespread use by the 1950s. Research on VHT resumed in Japan in the late 1970s as some commodities did not tolerate the fumigants used (ethylene dibromide and methyl bromide). A major change in the new VHT was the forcing of heated air through the load resulting in much shorter treatment times (a few hours). These modern VHT are the ones currently being evaluated by the TPPT.

HTFA was developed in Hawaii 25 years ago as a modification of VHT, which was thought to be causing surface damage to papaya (Armstrong *et al.* 1989). The modification was that HTFA maintained the dew point of the air in the treatment chamber below the surface temperature of the fruit to prevent condensation, which was considered the reason for fruit damage.

Differences between VHT and HTFA

The main distinction between VHT and HTFA is based on moisture content of the heated air and the consequential heating which results. VHT typically uses air near saturation, which results in condensation of water on the fruit surface until the fruit surface temperature increases to near the air temperature. During HTFA the dew point is typically always kept below the surface temperature of the commodity being heated resulting in no condensation on the fruit surface. Of the three heat treatments that have been used commercially, VHT, HTFA and hot water treatment (HWT), VHT results in the most rapid heating (Table 1), when all other factors are similar. This is because condensation of water vapour on a surface releases latent heat of 2257 J/g of water vapour in addition to the heat by convection from the heated air. HTFA mainly heats the commodity via convection.

Table 1. Mean time to raise fruit centre temperatures to desired level via three commercial heat treatments using three fruits per replicate (Shellie and Mangan 1994).

Treatment	Time (minutes) to reach desired temperature in	
	Mango	Grapefruit
Vapour heat	60	63
Hot water immersion	76	78
High temperature forced air	113	120

VHT does not achieve the treatment speed shown in the small-scale tests in Table 1 when applied to commercial-size lots because as water vapour condenses during treatment less vapour is available for condensation further down the airflow stream. Also, some heat will be lost evaporating some of the water that had previously condensed.

Because there seems to be no differences in efficacy between VH and HTFA treatments, the TPPT on its 2015-09 meeting¹⁴⁹ agreed that HTFA is a variation of VH and should be mentioned under VH for explanatory purposes, not as a separate treatment. A draft ISPM is being developed on the Requirements for the use of temperature treatments as phytosanitary measures (2014-005).

VHT and HTFA treatment schedules

A treatment schedule in ISPM 28 should contain information directly relevant to satisfying treatment requirements for efficacy on a commercial scale and nothing more. Operational requirements to achieve the treatment requirements will vary among treatment facilities and treated products and need to be considered on a case-by-case basis. In the case of heated air treatments that information would most basically be a temperature threshold that must be reached and the time that temperatures must remain at that threshold. It is assumed that temperature measurements are taken in sufficient locations within the treatment load that extreme temperatures are measured and that no part of the load remains significantly below temperature/time combinations necessary for efficacy.

¹⁴⁹ See section 5.1 of 2015-09 TPPT meeting report: <https://www.ippc.int/en/publications/81833/>

An example of a VHT schedule is ISPM 28, Annex 15, Vapour heat treatment for *Bactrocera cucurbitae* on *Cucumis melo* var. *reticulatus*:

Exposure in a vapour heat chamber:

- At $\geq 95\%$ rh
- Air temperature increasing from room temperature to $>46^{\circ}\text{C}$
- For between 3-5 h until fruit core temperature reaches 45°C
- Followed by 30 min at $\geq 95\%$ rh in an air temperature of $\geq 46^{\circ}\text{C}$ and with fruit pulp temperature $\geq 45^{\circ}\text{C}$.

An example of a HTFA schedule is the proposed: “High temperature forced air treatment for selected fruit fly species (Diptera: Tephritidae) in fruit” (2009-105). The TPPT recommended that the proposal be accepted for papaya to be disinfested of the species *Bactrocera melanotus* and *B. xanthodes*. The proposed treatment is based on:

Exposure in a forced air chamber:

- At $\geq 60\%$ rh
- Air temperature increasing from room temperature to 48.5°C
- For ≥ 3 hours or until core temperature reaches 47.5°C
- Followed by 20 min at $\geq 60\%$ rh, air temperature $\geq 48^{\circ}\text{C}$ and fruit pulp temperature $\geq 47.5^{\circ}\text{C}$
- After which fruit may be cooled in a shower of water at $24-26^{\circ}\text{C}$ for 70 min to maintain fruit quality.

Schedule Time. An open question is how the schedule time during the final holding or dwell phase of the treatment should be determined. One possibility is that the longest time required for any of the temperature recorders in the centre of individual commodities to reach the scheduled temperature would be the minimum required treatment time. This would be in harmony with phytosanitary irradiation treatments (ISPM 18, ISPM 28) where the highest dose recorded during confirmatory testing is the minimum dose in the schedule. Sometimes the minimum time scheduled for heated air treatments scheduled by some countries is the time when 50% of the recorders reach the desired temperature. A risk with this scheduling is that it permits some recorders to read significantly lower temperatures when 50% of the recorders reach the scheduled temperature, and any pests in that part of the load may be at sub-lethal temperature/times. While it may be assumed that this variation also occurred during the research to develop the treatment, the scale of phytosanitary treatment research can be considerably reduced and is likely conducted under a more uniform environment than a commercial facility. Both of these factors increase the possibility that some temperature recorders may not achieve the target temperature during the treatment period. In addition, some experiments to develop temperature treatments are designed so that the treatment time is initiated only when all of the temperature probes meet the treatment conditions. It is therefore important to consider how the supporting research was conducted when establishing the criteria for the treatment schedule.

Factors that may affect efficacy of commercial heated air treatments

Various factors might theoretically affect the efficacy of heated air treatments when applied on a commercial scale (Armstrong and Mangan 2007, Hallman 2000, Hallman 2007, Heather and Hallman 2008, Chapters 6 and 8). Few have been tested sufficiently to conclude whether or not they are significant or if any difference is sufficient to reduce efficacy when applied commercially. Efficacy of modern VHT and HTFA is based on the centres (or central seed surfaces) of commodities reaching a target temperature and being held at that temperature for a set amount of time. Therefore, although there may be factors that affect the heating rate of commodities besides temperature (moisture content, air speed, commodity size, shape, and density and its initial temperature, and load size, density, and arrangement) the effect of these factors on efficacy may be negligible because efficacy is based on temperature and time requirements, which may include heating rates.

Some factors may affect efficacy on a commercial scale and might not be compensated by defining efficacy as a threshold temperature/time combination, and these are discussed below. This list may not be exhaustive.

Heating rate. The heating rate of heated air treatments may vary because the end point for a treatment is not only time, as it is for some treatments (e.g., hot water immersion and fumigation), but temperature threshold at a certain time. Heating rate may be scheduled to be not too fast which would result in less total heat being delivered to the commodity with perhaps consequentially lowered efficacy. However, Whiting and Hoy (1998) found that as the heating rate decreased from 4°C/h to 1.7°C/h the time to achieve 99% mortality of *Epiphyas postvittana* in a 1 kPa oxygen atmosphere increased only by the amount of time necessary to reach the target temperature of 40°C, indicating no effect of heating rate on efficacy for the relatively low rates of heating studied. However, this treatment is complicated by the fact that it was a heat/low-oxygen treatment, not only heat. Neven (1998) found that heating rate was directly related to efficacy of hot water immersion of *Cydia pomonella* fifth instar; e.g., a heating rate of 4°C/h required 6 min at 46°C to kill 95%, while at a rate of 12°C/h 95% mortality was achieved in <1 min. Total heating time was 115 min at 12°C/h and 351 min at 4°C/h. The research by Neven (1998) suggests that maximum rather than minimum heating rates should be regulated. While there is no clear trend of an effect of heating rate on efficacy researchers and plant protection organizations need to account for differences in heating rates that may occur between experimental and commercial conditions and to minimize the likelihood of treatment failure. Because heating rate is the one factor generally thought to affect efficacy, testing of this effect should be part of research to develop heated air treatments.

Stress. Proteins that are synthesized in response to heat or other stress increase tolerance of the organism to heat and other forms of stress that lasts for many hours after the stress. These proteins are typically called heat shock proteins (hsp), although they may be induced by other stressors besides heat and may offer protection to other forms of stress besides heat. There are many examples in the phytosanitary heat treatment literature (Lurie and Jang 2007). Once a heat treatment is initiated there may be insufficient time for hsp to be produced to protect the insect from that treatment. However, Neven (1998) found that *C. pomonella* apparently developed increased tolerance to heat as it was being delivered at rates between 4-12°C/h. Similarly, Thomas and Shellie (2011) suggest that heat shock protein development can occur under commercial treatment scenarios where heating rates are slow, increasing the likelihood of treatment failure if the research supporting the treatment was done with a faster heating rate. Thus, the effect of stress on efficacy is related to and indeed may be the mode of action of the concern with heating rate. Of course, it must be acknowledged that increased tolerance to heat may be due to factors other than hsp. A problem might arise when pests infesting commodities are subjected to stress that induces hsp a few hours before treatment. Because phytosanitary heat treatment research is usually done under controlled conditions, stress-inducing hsp may not occur during the research. However, under commercial conditions there may be opportunities for sufficient stress to induce hsp, particularly in the case of high loading factors common to commercial operations which typically result in slower heating rates compared to laboratory trials, thus potentially increasing tolerance of pests to the treatment.

Phenotype. The aggregate phenotypes of a pest species may theoretically affect efficacy, although few controlled studies have been done comparing different populations of quarantine pests for thermotolerance. Hansen et al. (1990) found no difference between a laboratory colony of *Bactrocera dorsalis* and feral insects in Hawaii when third instars were heated in papaya. However, the laboratory colony had originated from insects collected years before in the same region and was reared under ambient conditions, resulting in perhaps little natural selection pressure on thermotolerance of the laboratory colony. Because thermotolerance can be genetically selected, it may be possible that different populations of the same pest species express phenotypical differences in thermotolerance.

Rearing conditions. Hallman (1994) found that *Anastrepha suspensa* third instars reared at a constant 30°C in diet were more thermotolerant than those reared at lower temperatures. Alternatively if insects used to develop phytosanitary heat treatments are reared at constant temperatures that are below those

commonly found in the field where the insect is a quarantine pest it is conceivable that the lab-reared insect could be easier to kill, resulting in a treatment that may have a lower level of efficacy when applied commercially.

Infestation methodology. Shellie and Mangan (2002) found that *Anastrepha obliqua* larvae reared on diet and inserted into mango (a technique used to support some heated air treatments) were easier to kill via hot water immersion than those reared via oviposition in mango. Hallman (2014) found a similar, less marked, result with *Anastrepha ludens* in grapefruit. Therefore, it is conceivable that infestation techniques using diet-reared larvae implanted into fruit would result in sub-efficacious heat treatments.

Host. The host upon which an insect is reared might theoretically affect thermotolerance, although there are no data from adequately controlled studies on this topic. A reasonable hypothesis is that poorer hosts result in insects that are easier to kill with heat versus insects reared on more favourable hosts. This seems to be the case for cold treatments (De Lima et al. 2007). If this holds true for heat treatments it would mean that treatments developed with good hosts would suffice for all hosts, although they may be more severe than needed for poor hosts. On the contrary, a treatment developed on a poor host may not necessarily suffice for a good host.

Atmosphere. Decreased levels of oxygen and/or increased levels of carbon dioxide increase susceptibility of quarantine pests to heat and have been used to develop phytosanitary treatments. Indeed, the TPPT has evaluated two heat/modified atmosphere treatments (2012-010 and 2012-013) and found them acceptable. Therefore, modifications of the atmosphere during a heat treatment do not reduce efficacy and need not be of concern to PPO, unless the treatment is specifically a heat/modified atmosphere treatment, and then the concern would be that the atmosphere is maintained within a specified range.

Notes on commodity quality. Factors affecting heating rate and condensation of water on the commodity may also affect commodity quality, and, thus, commercial utility of the treatment. Commodity tolerance may also differ among cultivars, seasons, and agroecosystems.

Temperature recording during research

Due to variations in research methodologies that can be used to effectively support heated air treatments, standard protocols for recording temperature have not been developed. There is a wide variety of commercially available temperature monitoring and recording systems that are suitable for use in heated air treatment research. Researchers typically choose their temperature monitoring systems based on their available resources and the requirements of their methodology and experimental design. Temperature recording systems can be calibrated by the manufacturer, certified via traceable calibration (e.g. NIST) or calibrated against a certified temperature measurement system in the range of temperatures to be specified by the treatment schedule. Temperature dose mapping is done to identify the range of temperatures occurring during treatment. Temperature recording during the research is done periodically in areas of the load that include the extremes found during mapping. Special attention should be paid to obtaining temperature readings from the innermost areas of the largest individual commodities being heated and commodities located in cold spots in the chamber. The most important factors that should be described and quantified are calibration, accuracy of temperature probes and recorder, and logging intervals.

Information that should be provided in heated air treatment submissions

Specific protocols describing information to be provided in submissions to the TPPT for heated air treatments have not been developed because the unique nature of many treatments conducted under different situations calls for different information. It is the responsibility of the researchers to provide clear and organized reporting of their results without flooding the submission with irrelevant information. Information to be reported can be divided into several groups concerning the pest, commodity, heat treatment system, temperature monitoring and recording system, and control and measurement of other variables (Armstrong and Mangan 2007, Tang et al. 2007, Heather and Hallman 2008, Chapter 6).

Pest. The scientific name of the pest is provided, and vouchers should be deposited in a permanent insect collection for future reference as taxonomic classifications may change. If more than one pest species is covered by the proposal and the treatment is based on controlling the most tolerant species, relative tolerance data among the species is provided. The history of the population is provided, and research is done with organisms either from wild populations or not far removed in generations from wild populations. Information on most tolerant stage(s) is provided of the stages found in the commodities in international trade. Rearing information is provided, including diets, temperatures, and generations in colony.

Commodity. The species, cultivars, stage of maturity, and sources of host material used in the research is given. The host material is of similar quality to that which is marketed and should be free of pesticides that may enhance target pest mortality.

Heat treatment system. The system used to develop the treatments is described and referenced, including how measurements of heat and other variables (e.g., humidity, air speed) were calibrated and performed.

Treatment. Application of the treatment is described in sufficient detail for anyone else to replicate it exactly. Recording of all variables is done with sufficient periodicity to capture differences over time.

Criterion for efficacy. Determination of efficacy for an individual pest is explained in detail. It is insufficient to write “mortality”, rather how it was decided that an insect was dead. This criterion must be one that the regulatory agencies of importing NPPO can accept as being certain within the span of time and costs under which they may be inspecting the imported commodity.

Determination of most tolerant stage. If it has not already been determined, the most thermotolerant stage is determined *in situ*. It is not valid to do that determination *in vitro* because location of the different pest stages in the commodity may affect tolerance. Artificially infesting the commodity with diet-reared organisms might also affect tolerance (Shellie and Mangan 2002, Hallman 2014). If diet-reared organisms are used, scientifically based justification must be provided.

Dose-response testing. After the most tolerant stage(s) are identified testing is done to seek the mildest treatment that will provide a high level of efficacy. Although probit analysis or other models may be used to analyse the data and predict levels of efficacy, they might not be accurate at the high levels of efficacy demanded of phytosanitary treatments. An iterative approach may be the best method to determine the dose required for efficacy. Numbers of insects treated at each level in each replicate and their efficacy responses are reported.

Confirmatory testing. Traditionally treatments for fresh commodities require large-scale confirmatory testing to ensure that an estimated dose achieves the desired high level of efficacy and is done with the most thermotolerant stage(s). This testing should be done over a long enough period of time to encompass broad variation in test insects and commodities that is representative of the prospective export industry. Numbers of insects treated in each replicate and their efficacy responses are reported.

Analysis of results. The numbers of organisms and commodities treated in all tests are reported. Numbers surviving and not surviving the criterion for efficacy are reported. Determination of most tolerant stage is analysed in several replicates. Even though an analysis of variance may show no statistically significant differences among stages, it would be prudent to use the stage(s) with the highest mean tolerance in the large-scale testing to confirm treatment efficacy.

Concluding observations

One concern that needs to be examined for all phytosanitary treatments, not only heated air, relates to how minimum threshold conditions are established for the treatment schedule. There are two general methods: 1) the severest recording determines the minimum for the treatment schedule, and 2) a mean/median of all of the recordings becomes the minimum for the schedule. The first method is much more conservative in terms of treatment efficacy; however, it may also allow for more damage to the commodity being treated. This is because of the robustness of phytosanitary treatments

stemming from two areas: A) commercially traded fresh commodities are essentially not traded at infestation levels approaching those for which the extremely high levels of efficacy are designed, and B) the measurement of efficacy used to define mortality may exceed that necessary to prevent establishment of an invasive species.

Heated air treatments may be simplified and harmonized by using, as treatment endpoint, a temperature/time threshold with perhaps an established time requirement to reach the temperature threshold. The hypothesis supporting this proposal is that it does not matter how a certain temperature/time threshold is reached within the load being treated, regarding such variables as air temperature, humidity, air speed, size of commodity, physical arrangement, load factor, etc., but that the entire load reach that temperature/time combination. The minimum/maximum time requirement to reach the temperature threshold would reduce potential variation in efficacy caused by heating rate (see discussion below). Although VHT imparts more heat to the load initially compared with HTFA, after the threshold temperature is reached no more condensation should be occurring because the dew point temperature would not reach the surface temperature of the load. Therefore, in the example VHT schedule given above (ISPM 28, Annex 15), the humidity level during the 30 min hold time should not matter. Furthermore, humidity may not matter during the heat-up either, as long as the threshold temperature was reached in a reasonable amount of time. Industry would want to keep humidity high enough to prevent desiccation, but it should not matter for efficacy. This philosophy could facilitate the development of generic heated air treatments. Harmonization of VHT and HTFA treatments would ideally require supporting research to substantiate the hypothesis that humidity level does not affect efficacy during hold time.

The number of factors that theoretically could affect treatment efficacy, including a few with data showing that they do under specific circumstances, may cast doubt on attempts to schedule broadly applicable phytosanitary heated air treatments. However, importing countries (e.g., Japan, New Zealand, and the USA) have a history of allowing heated air treatments without problems that could be traced to efficacy. Phytosanitary treatments in general tend to be more severe than needed for pest exclusion in commercial applications, which provides an additional margin of error to allow for reductions in efficacy resulting from these factors.

Nevertheless, researchers are urged to conduct their research using a protocol that closely follows natural conditions regarding factors such as genotype of pest, rearing temperatures, host material, etc., and, where feasible, include studies on the effect of factors that have may have the largest impact on treatment efficacy. Additionally, factors that will not be prescribed by the treatment schedule should vary to encompass natural variability in the populations for which the treatment is designed. Plant protection organizations should also be aware of the differences between factors that should be carefully controlled and those that should vary to not place unnecessary burdens on researchers and industry.

11. General Considerations for Wood Packaging Material Heat Treatments

The panel considered the following issues when evaluating wood packaging material heat treatments for adoption as international standards (outlined below).

Mortality assessments

When assessing mortality, the target life stage should be that most likely to be present in the wood at the time of treatment. Any target life stage found alive should be considered a survivor whether or not it subsequently fails to survive to adulthood or produce offspring. This takes account of the fact that in practice on phytosanitary inspection any live life stage found will be considered a survivor.

Environmental factors

Consideration should be taken of potential environmental effect on the efficacy of the treatment under conditions expected to be encountered at the time of treatment (such as wood moisture content or density). Unexpected results should be considered with care.

Pre-treatment acclimation

Target pests may be less susceptible to temperature treatments depending on the conditions they are exposed to immediately prior to treatment. The panel considers that where this may be an issue, pre-treatment requirements should be included in any recommended treatment schedule.

Scale of treatment application

The panel should consider any possible reduction in effectiveness of temperature treatments that may occur when treatments are scaled up and applied in commercial conditions.

Rate of temperature change

Where the rate of temperature change of the commodity may be considered significant to the effectiveness of a temperature treatment, this should be specified in the treatment schedule.

Heating process

Consideration should be taken of the heating process (e.g. heating from inside out or outside in) and the conditions that need to be met before the treatment can commence.

12. General Considerations for Cold Treatments

The panel considered the issues associated with treatments based on temperature, taking into account the work of Hallman and Mangan (1997). The panel recommended a number of principles that they should apply when evaluating temperature treatments for adoption as international standards (outlined below).

Mortality assessments

When assessing mortality, any larvae that are found alive should be considered survivors whether or not they subsequently fail to pupate or survive to adults. This takes account of the fact that in practice on phytosanitary inspection any live insect found will be considered a survivor.

Genotype of insect

It is possible that laboratory-bred colonies may become more susceptible to temperature-based treatments over time. The panel is not aware of any research having been undertaken to demonstrate whether this is an issue in reality. The panel considers that as long as the colonies used in the research have been established or reinvigorated before the research, issues such as these should not be considered significant subject to research showing otherwise.

The Insect Pest Control laboratories of FAO/IAEA conducted a study to explore if the different populations of *Ceratitidis capitata* respond differently to cold treatments. Three populations were compared in cold tolerance and concluded that there was no evidence to support any significant differences in cold tolerance of *C. capitata* populations from different geographical regions, and the TPPT noted that differences apparent from the literature might instead be due to differences in methodology¹⁵⁰.

Pre-treatment acclimation

Insects may be less susceptible to temperature treatments depending on the conditions they are exposed to immediately prior to treatment. The panel considers that where this may be an issue pre-treatment requirements should be included in any recommended treatment schedule.

In July 2013¹⁵¹, the TPPT agreed that artificial infestation in relation to cold tolerance would be considered satisfactory only when the pest developmental stage tested had developed in the fruit (e.g. eggs placed and larvae tested).

¹⁵⁰ See TPPT 2016-09 report for the full discussions and related appendix related to the methodology, outcomes and conclusions from the IAEA/FAO study.

¹⁵¹ TPPT 2013-07 report

Commodity variability

To provide confidence that temperature treatments are applicable internationally, host material used in research should be sampled from as wide a geographic area as possible and unexpected results should be considered with care.

Regarding cultivars of *Citrus* species or any other host commodity, the TPPT in their September 2015 meeting concluded¹⁵² that there was no evidence indicating that different cultivars of *Citrus sinensis* or any other host commodity responded differently to cold treatments. This conclusion was based on a review of the available literature and the analysis of a number of studies that failed to demonstrate any differences in responses to cold treatments on cultivar level for *Citrus sinensis*.

In their meeting in September 2016, the TPPT further discussed the effects of the cultivar/variety on the efficacy of cold treatments. The Phytosanitary Measures Research Group (PMRG) had previously analysed all data available where *Ceratitits capitata* had been tested on two or more varieties and where studies were conducted by the same research team, using the same methodology. Based on this analysis the TPPT concluded that there is a tendency that as the lethal time (LT) increases, the differences in efficacy disappear. However, when the LT 99 and above were considered for the most tolerant stage/instar, no differences were reported. Therefore, the TPPT found that there is no evidence to support that varieties could affect the cold tolerance.

Scale of treatment application

The panel should consider any possible reduction in effectiveness of temperature treatments that may occur when they are scaled up and applied in commercial conditions.

Rate of temperature change

Where the rate of temperature change of the commodity may be considered significant to the effectiveness of a temperature treatment, this should be specified in the treatment schedule.

Issues associated with drafting of the treatment descriptions for cold treatments

When drafting the treatment descriptions from the different submissions, the TPPT noted that one submission related to two fruit flies on a number of different hosts. Other submissions were for the same fruit fly species and host commodity. The TPPT therefore made the following decisions regarding the treatment descriptions:

Each treatment should be for an individual fruit fly species.

For fruit fly hosts, the TPPT was aware that several countries had found different *Citrus* species responded to cold treatment differently. Treatments should therefore be produced for separate *Citrus* species.

Treatments involving the same fruit fly species and host (for example *Ceratitits capitata* on *Citrus sinensis*) were included as different schedules in the same treatment description.

Regarding temperatures sensitivities (e.g. 2°C +/- 0.5°C), these were not added to the treatment schedules. In some submissions the temperature limits were quoted, but the TPPT noted that experimental probes were often more sensitive than commercial probes. The TPPT therefore decided to include a sentence in the treatment descriptions indicating that 'the stated temperatures should not be exceeded'. Commercial operators would need to take into account the normal working range of their equipment in order to meet this requirement.

13. General Considerations for Wood Fumigation Treatments

The panel considered the following issues when evaluating wood fumigation treatments for adoption as international standards (outlined below).

¹⁵² See the 2015-09 meeting report for details on the discussions and analysis

Mortality assessments

When assessing mortality, the target life stage should be that most likely to be present in the wood at the time of treatment. Any target life stage found alive should be considered a survivor whether or not it subsequently fails to survive to adulthood or produce offspring. This takes account of the fact that in practice on phytosanitary inspection any live life stage found will be considered a survivor.

Environmental factors

Consideration should be taken of potential environmental effects on the efficacy of the treatment under conditions expected to be encountered at the time of treatment. Wood factors such as moisture content, density, porosity and presence of bark should be considered along with temperature. Unexpected results should be considered with care.

Scale of treatment application

The panel should consider any possible reduction in effectiveness of fumigation treatments that may occur when treatments are scaled up and applied in commercial conditions.

14. General Considerations for Irradiation Treatments

The panel considered the issues associated with treatments based on irradiation, taking into account the work of Hallman and Mangan (1997). The panel recommended a number of principles that they should apply when evaluating irradiation treatments for adoption as international standards (outlined below).

Extension of treatments to all fruits and vegetables

The efficacy of irradiation treatments can be extrapolated to all fruits and vegetables. Confidence was based on experience in the application of irradiation treatments and evidence from studies on *Anastrepha ludens*, *A. suspensa* and *Bactrocera tryoni* (Bustos *et al.*, 2004; Gould & von Windeguth, 1991; Hallman & Martinez, 2001; Jessup *et al.*, 1992; von Windeguth 1986; von Windeguth & Ismail, 1987).

The panel recognised, however, that treatment efficacy has not been tested for all potential fruit and vegetable hosts of the submitted target pests. If evidence becomes available to show that the extrapolation of treatments to cover all hosts of the target pests is incorrect, then the treatments should be reviewed.

Extension of treatments to all populations within a species

The panel considered whether the scope of submitted irradiation treatments could be extended to cover all strains and biotypes of the target pests concerned.

The panel was confident that the extrapolation of efficacy to all strains and biotypes of the target pests could be made for the irradiation treatments that had been submitted. This confidence was based on the absence of published evidence for significant differences between subspecies and biotypes in their radiation tolerance, including a study comparing strains of one target pest by Hallman (2003). The panel also recognised that recommended minimum doses are higher than otherwise required and should account for any minor differences in intra-species tolerances that may exist.

The panel recognised, however, that treatment efficacy has not been tested for all potential strains and biotypes of the submitted target pests. If evidence becomes available to show extrapolation of treatments to cover all strains and biotypes is incorrect, then the treatments should be reviewed.

Extension of species to the whole genus

The panel considered whether the scope of submitted irradiation treatments could be extended to cover all species in a genus of the target pests concerned.

The panel noted that Bakri *et al.* (2005) had indicated that, with few exceptions, there was no need to develop radiation biology data for all species within the same genus. The panel considered that a case

for extrapolating irradiation doses to all species within a genus would need to be explored more fully in any submission.

Extending beyond genus to family

The panel considered whether the scope of submitted irradiation treatments could be extended to cover all genera in a family of the target pests concerned.

The TPPT noted that within Tephritidae a wide range of genera has been tested and this had supported extending irradiation treatments to the Family level in this case (report of 2006 meeting).

It was noted that for other insect families it would be impossible to get sufficient data to confirm that all genera within a family conform to the same treatment dose. This would be an enormous undertaking, which is unlikely to happen. The panel considered that a case for extrapolating irradiation doses to all genera within a family would need to be explored more fully in any submission.

Determination of the most tolerant life stage of the target pest(s)

The panel noted that the insect life stage that is most tolerant to irradiation is the most advanced stage when identical objectives are measured (e.g. prevention of adult emergence). The treatments only need to be effective for those life stages likely to be encountered in the traded commodity.

Effect of environmental conditions

The panel considered whether the scope of submitted irradiation treatments could be extended to cover treatments undertaken in all environmental conditions likely to be encountered under commercial conditions.

The panel was confident that the extrapolation of efficacy to all likely temperatures could be made for the irradiation treatments that had been submitted. Confidence was based on experience in the operation of irradiation treatments and evidence from studies on *Rhagoletis pomonella* (Hallman, 2004).

The panel noted that lowered oxygen conditions (hypoxia) may affect the efficacy of irradiation treatments. Unless the treatment has been determined to be effective under hypoxic conditions, the panel considers that to achieve the stated treatment efficacy the irradiation treatment should not be applied to fruit and vegetables stored in modified atmospheres.

Non-target effects of irradiation

The panel considered that the only potentially significant non-target effects of the irradiation treatments that were reviewed at the meeting were those affecting commodity quality. The research presented indicated that there would be minimal adverse effects at the prescribed dosages to the commodities tested. In some circumstances the research indicated that the irradiation treatments may enhance product quality through extending shelf life. However, the panel has recommended extending the treatments to all fruits and vegetables, including those that have not been tested or have been shown to be negatively impacted by relatively low irradiation doses. The panel therefore recommends that, prior to approving an irradiation treatment; NPPOs may wish to take account of any potential non-target effects of the treatment.

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APPENDIX 1: Submission form for phytosanitary treatments

(Reviewed by TPPT March 2016)

Name of Country/RPPO: _____

[Click here](#) to find the IPPC Procedure Manual for Standard Setting on the IPP (www.ippc.int), where you can download this form.

Submission number (Secretariat Use Only):

Complete the following form, preferably in electronic format, and submit by e-mail to the IPPC Secretariat (ippc@fao.org) no later than [date to be established by the IPPC Secretariat]. Please use one form per phytosanitary treatment. An electronic version of this form is available on the International Phytosanitary Portal (IPP) at <https://www.ippc.int/publications/submission-form-phytosanitary-treatments-2>. Incomplete submissions will be returned. Please save the completed submission form with the following file name: COUNTRY or RPPO NAME –Title of treatment.doc, prior to submitting to the IPPC Secretariat via e-mail.

(Text in brackets given for explanatory purposes)

Name of treatment	<i>(Provide enough detail to identify the treatment; for example, cold treatment of citrus for Mediterranean fruit fly (If quoting the taxonomy of any citrus spp., it should be in accordance with the reference Cottin, R. 2002. Citrus of the world: a citrus directory. France, INRA-CIRAD.)</i>
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Submitted by: (Name of national or regional plant protection organization)
Contact: (Contact information of an individual able to clarify issues relating to this submission, including sources of efficacy data)
Name:
Position and organization:
Mailing address:
.....
Phone:..... Fax:
E-mail:.....

Treatment description

Active ingredient	(Brand names alone will not be accepted)
Treatment type	(For example, chemical, irradiation, heat, cold)
Target pest	(Scientific name)
Target regulated articles	
Treatment schedule	(Include a brief description such as active ingredient, dose, time and temperature and the efficacy of the treatment (effective dose and confidence limits))
Other relevant information	(This should include any assumptions or extrapolations and the supporting evidence for these)
References	

The following form must be completed in accordance with [ISPM 28 Phytosanitary treatments for regulated pests](#), the IPPC Strategic Framework and the *Procedure and criteria for identifying topics for inclusion in the IPPC standard setting work programme*.



Copies of all relevant supporting information and publications should be supplied with the treatment submission, preferably in PDF format, for ease of subsequent distribution.

The following form refers to the relevant sections of ISPM 28 and are numbered accordingly.

3.2 Efficacy data in support of the submission of a phytosanitary treatment

The source of all efficacy data (published or unpublished) should be provided in the submission. Supporting data should be presented clearly and systematically.

3.2.1 Efficacy data under laboratory/controlled conditions (Treatments may be considered without efficacy data under laboratory/controlled conditions if sufficient efficacy data is available from the operational application of the treatment (section 3.2.2) and if no data under laboratory/controlled conditions exists this section may be left blank.)

Pest information

Identity of the pest to the appropriate level, life stage, and if a laboratory or field strain was used

Conditions under which the pests are cultured, reared or grown

Biological traits of the pest relevant to the treatment

Method of natural or artificial infestation

Determination of most resistant species/life stage (in the regulated article where appropriate)

Regulated article information

Type of regulated article and intended use

Botanical name for plant or plant product (where applicable)

Conditions of the plant or plant product

Experimental parameters

Level of confidence of laboratory tests provided by the method of statistical analysis and the data supporting that calculation

Experimental facilities and equipment

Experimental design

Experimental conditions

Monitoring of critical parameters

Methodology to measure the effectiveness of the treatment

Determination of efficacy over a range of critical parameters, where appropriate

Methodology to measure phytotoxicity, when appropriate

Dosimetry system, calibration and accuracy of measurements,

3.2.2 Efficacy data using operational conditions (historical data, may in some cases substitute for the requested information below)

Pest information

Identity of the pest to the appropriate level, life stage, and if a laboratory or field strain was used

Conditions under which the pests are cultured, reared or grown

Biological traits of the pest relevant to the treatment

Method of natural or artificial infestation

Determination of most resistant species/life stage (in the regulated article where appropriate)

Regulated article information
Type of regulated article and intended use
Botanical name for plant or plant product (where applicable)
Conditions of the plant or plant product
Experimental parameters
Level of confidence of laboratory tests provided by the method of statistical analysis and the data supporting that calculation
Experimental facilities and equipment
Experimental design
Experimental conditions
Monitoring of critical parameters
Methodology to measure the effectiveness of the treatment
Determination of efficacy over a range of critical parameters, where appropriate
Methodology to measure phytotoxicity, when appropriate
Dosimetry system, calibration and accuracy of measurements
Factors that affect the efficacy of the treatment
Special procedures that affect the success of the treatment, if applicable
3.3 Feasibility and applicability (Information should be provided where appropriate on the following items)
Procedure for carrying out the phytosanitary treatment
Cost of typical treatment facility and operational running costs if appropriate
Commercial relevance, including affordability
Extent to which other NPPOs have approved the treatment as a phytosanitary measure
Availability of expertise needed to apply the phytosanitary treatment
Versatility of the phytosanitary treatment
The degree to which the phytosanitary treatment complements other phytosanitary measures
Summary of available information of potential undesirable side-effects
Applicability of treatment with respect to specific regulated article/pest combinations
Technical viability
Phytotoxicity and other effects on the quality of regulated articles, when appropriate
Consideration of the risk of the target organism having or developing resistance to the treatment

Send submissions to:

E-mail: ippc@fao.org
(preferred)

Mail: IPPC Secretariat (AGPP)
Food and Agriculture Organization of the UN
Viale delle Terme di Caracalla,
00153 Rome, Italy

APPENDIX 2: Prioritization score sheet for phytosanitary treatments¹⁵³

(Reviewed by TPPT 2016-03)

[Click here](#) for the IPPC Procedure manual for standard setting on the IPP (www.ippc.int), where you can download this form.

Scorer:

Date:

Proposed treatment:

Criterion	Score	Reasons
Core criteria		
Practical		
Economic		
Environmental		
Strategic		
Total		

Scores	Definitions	Scores	Definitions
0	No value	3	Moderate
1	Low	4	
2		5	High

¹⁵³ Aside from the score sheet, the TPPT agreed to delete the “Prioritization criteria for proposed phytosanitary treatments and score definitions” and use the *Procedure and criteria for identifying topics for inclusion in the IPPC standard setting work programme* adopted by the CPM for determining priorities. The TPPT revised the score sheet as presented in this procedure manual (TPPT 2009-01 meeting report).

APPENDIX 3: Checklist for evaluating treatment submissions**CHECKLIST FOR EVALUATING TREATMENT SUBMISSIONS***(Revised TPPT 2013-03)***CHECKLIST: TITLE****TREATMENT DESCRIPTION¹⁵⁴****Publication information**

Date of this document	
Treatment title	
Document category	Draft phytosanitary treatment
Current document stage	Checklist
Origin	
Major stages	
Notes	

Treatment schedule

Name of treatment	(Provide enough detail to identify the treatment; for example, cold treatment of citrus for Mediterranean fruit fly) (If quoting the taxonomy of any <i>Citrus</i> spp., it should be in accordance with the reference Cottin, R. 2002. <i>Citrus of the world: a citrus directory</i> . France, INRA-CIRAD.)
Active ingredient	(Brand names alone will not be accepted)
Treatment type	(For example, chemical, irradiation, heat, cold)
Target pest	(Scientific name)
Target regulated articles	
Treatment schedule	(Include a brief description such as active ingredient, dose, time and temperature and the efficacy of the treatment (effective dose and confidence limits))
Other relevant information	(This should include any assumptions or extrapolations and the supporting evidence for these)
References	

¹⁵⁴ This description will be used as the basis for the treatment document for SC approval and member consultation.

Checklist¹⁵⁵

SUMMARY INFORMATION		COMMENTS – ARE THE REQUIREMENTS MET?
1.	The summary information should be submitted by NPPOs or RPPOs to the Secretariat and should include:	
2.	name of the treatment	
3.	name of the NPPO or RPPO and contact information	
4.	name and contact details of a person responsible for submission of the treatment	
5.	treatment description (active ingredient, treatment type, target regulated article(s), target pest(s), treatment schedule, other information)	
6.	reason for submission, including its relevance to existing ISPMs	
7.	Efficacy data in support of the submission of a phytosanitary treatment	
8.	The source of all efficacy data (published or unpublished) should be provided in the submission. Supporting data should be presented clearly and systematically.	
9.	Efficacy data provided	
10.	Efficacy level	ED _{xxx} at XX% confidence level ¹⁵⁶
11.	Intended outcome	
12.	Pest information:	
13.	identity of the pest	
14.	conditions under which the pests are cultured, reared or grown	
15.	biological traits of the pest relevant to the treatment	
16.	method of natural or artificial infestation	
17.	determination of most resistant species/life stage (in the regulated article where appropriate)	
18.	Regulated article information:	
19.	type of regulated article and intended use	
20.	botanical name for plant or plant product	
21.	conditions of the plant/plant product (free from non-target pests/size, shape, weight/infested at susceptible stage)	
22.	Experimental parameters (labs and/or operational) and/or historic information:	

¹⁵⁵ For the first evaluation after submission of the treatment, the TPPT lead should complete the comment column. The checklist will then be considered by the whole TPPT and the panel may amend the comments during their discussion.

For subsequent evaluations of the treatment, new rows for additional information and comments should be inserted underneath each relevant entry every time they are added by the TPPT lead. As before, the TPPT may amend these comments during discussion at the TPPT meeting.

¹⁵⁶ Provide appropriate reference here.

SUMMARY INFORMATION		COMMENTS – ARE THE REQUIREMENTS MET?
23.	level of confidence of tests provided by the method of statistical analysis and the data	
24.	experimental facilities and equipment	
25.	experimental design	
26.	experimental conditions	
27.	determination of efficacy over a range of critical parameters	
28.	methodology to measure the effectiveness of the treatment	
29.	monitoring of critical parameters (e.g. exposure time, dose, temperature of regulated article and ambient air, relative humidity)	
30.	Feasibility and applicability, such as:	
31.	procedure for carrying out the phytosanitary treatment (including ease of use, risks to operators, technical complexity, training required, equipment required, facilities needed)	
32.	cost of typical treatment facility and operational running costs if appropriate	
33.	commercial relevance, including affordability	
34.	extent to which other NPPOs have approved the treatment as a phytosanitary measure	
35.	availability of expertise needed to apply the phytosanitary treatment	
36.	versatility of the phytosanitary treatment (e.g. application to a wide range of countries, pests and commodities)	
37.	the degree to which the phytosanitary treatment complements other phytosanitary measures (e.g. potential for the treatment to be used as part of a systems approach for one pest or to complement treatments for other pests)	
38.	consideration of potential indirect effects (e.g. impacts on the environment, impacts on non-target organisms, human and animal health)	
39.	applicability of treatment with respect to specific regulated article/pest combinations	
40.	technical viability	
41.	phytotoxicity and other effects on the quality of regulated articles	
42.	consideration of the risk of the target organism having or developing resistance to the treatment	

ANNEX 1: Adopted International Standards for Phytosanitary Measures (ISPMs)

The below list of ISPMs is available at <https://www.ippc.int/en/publications/626/>.

Texts of adopted ISPMs are available at: <https://www.ippc.int/core-activities/standards-setting/ispm>.

- ISPM 1 *Phytosanitary principles for the protection of plants and the application of phytosanitary measures in international trade* (adopted in 1993, revised in 2006)
- ISPM 2 *Framework for pest risk analysis* (adopted in 1995, revised in 2007)
- ISPM 3 *Guidelines for the export, shipment, import and release of biological control agents and other beneficial organisms* (adopted in 1995, revised in 2005)
- ISPM 4 *Requirements for the establishment of pest free areas* (adopted in 1995)
- ISPM 5 *Glossary of phytosanitary terms* (updated as needed)
 - Supplement 1 *Guidelines on the interpretation and application of the concept of “official control” and “not widely distributed” for regulated pests* (2012)
 - Supplement 2 *Guidelines on the understanding of “potential economic importance” and related terms including reference to environmental considerations* (2003)
 - Appendix 1 *Terminology of the Convention on Biological Diversity in relation to the Glossary of phytosanitary terms* (2009)
- ISPM 6 *Guidelines for surveillance* (adopted in 1997)
- ISPM 7 *Phytosanitary certification system* (adopted in 1997, revised in 2011)
- ISPM 8 *Determination of pest status in an area* (adopted in 1998)
- ISPM 9 *Guidelines for pest eradication programmes* (adopted in 1998)
- ISPM 10 *Requirements for the establishment of pest free places of production and pest free production sites* (adopted in 1999)
- ISPM 11 *Pest risk analysis for quarantine pests* (adopted in 2001, revised in 2004 and 2013)
- ISPM 12 *Phytosanitary certificates* (adopted in 2001, revised in 2011)
 - Appendix 1 *Electronic phytosanitary certificates, information on standard XML schemas and exchange mechanisms* (2014)
- ISPM 13 *Guidelines for the notification of non-compliance and emergency action* (adopted in 2001)
- ISPM 14 *The use of integrated measures in a systems approach for pest risk management* (adopted in 2002)
- ISPM 15 *Regulation of wood packaging material in international trade* (originally adopted in 2002, revised in 2009, Annex 1 and 2 revised in 2013)
- ISPM 16 *Regulated non-quarantine pests: concept and application* (adopted in 2002)
- ISPM 17 *Pest reporting* (adopted in 2002)
- ISPM 18 *Guidelines for the use of irradiation as a phytosanitary measure* (adopted in 2003)
- ISPM 19 *Guidelines on lists of regulated pests* (adopted in 2003)
- ISPM 20 *Guidelines for a phytosanitary import regulatory system* (adopted in 2004)

- ISPM 21 *Pest risk analysis for regulated non-quarantine pests* (adopted in 2004)
- ISPM 22 *Requirements for the establishment of areas of low pest prevalence* (adopted in 2005)
- ISPM 23 *Guidelines for inspection* (adopted in 2005)
- ISPM 24 *Guidelines for the determination and recognition of equivalence of phytosanitary measures* (adopted in 2005)
- ISPM 25 *Consignments in transit* (adopted in 2006)
- ISPM 26 *Establishment of pest free areas for fruit flies (Tephritidae)* (adopted in 2006, revised in 2014 and 2015)
- Annex 2 *Control measures for an outbreak within a fruit fly-pest free area* (2014)
 - Annex 3 *Establishment of pest free areas for fruit flies (Tephritidae) on Phytosanitary procedures for fruit fly (Tephritidae) management* (2015)
- ISPM 27 *Diagnostic protocols for regulated pests* (adopted in 2006)
- DP 1: Diagnostic protocol for *Thrips palmi* Karny (2010)
 - DP 2: Diagnostic protocol for *Plum pox virus* (2012)
 - DP 3: Diagnostic protocol for *Trogoderma granarium* Everts (2012)
 - DP 4: Diagnostic protocol for *Tilletia indica* Mitra (2014)
 - DP 5: Diagnostic protocol for *Phyllosticta citricarpa* (McAlpine) Aa on fruit (2014)
 - DP 6: Diagnostic protocol for *Xanthomonas citri* subsp. *citri* (2014)
 - DP 7: Diagnostic protocol for *Potato spindle tuber viroid* (2015)
 - DP 8: Diagnostic protocol for *Ditylenchus dipsaci* and *Ditylenchus destructor* (2015)
 - DP 9: Diagnostic protocol for Genus *Anastrepha* (2015)
 - DP 10: Diagnostic protocol for *Bursaphelenchus xylophilus* (2016)
 - DP 11: Diagnostic protocol for *Xiphinema americanum sensu lato* (2016)
 - DP 12: Diagnostic protocol for Phytoplasmas (2016)
 - DP 13: Diagnostic protocol for *Erwinia amylovora* (2016)
 - DP 14: Diagnostic protocol for *Xanthomonas fragariae* (2016)
 - DP 15: Diagnostic protocol for *Citrus tristeza virus* (2016)
 - DP 16: Diagnostic protocol for Genus *Liriomyza* Mik (2016)
 - DP 17: Diagnostic protocol for *Aphelenchoides besseyi*, *A. ritzemabosi* and *A. fragariae fragariae* (2016)
- ISPM 28 *Phytosanitary treatments for regulated pests* (adopted in 2007)
- PT 1: Irradiation treatment for *Anastrepha ludens* (2009)
 - PT 2: Irradiation treatment for *Anastrepha obliqua* (2009)
 - PT 3: Irradiation treatment for *Anastrepha serpentina* (2009)
 - PT 4: Irradiation treatment for *Bactrocera jarvisi* (2009)
 - PT 5: Irradiation treatment for *Bactrocera tryoni* (2009)
 - PT 6: Irradiation treatment for *Cydia pomonella* (2009)
 - PT 7: Irradiation treatment for fruit flies of the family Tephritidae (generic) (2009)
 - PT 8: Irradiation treatment for *Rhagoletis pomonella* (2009)
 - PT 9: Irradiation treatment for *Conotrachelus nenuphar* (2010)
 - PT 10: Irradiation treatment for *Grapholita molesta* (2010)
 - PT 11: Irradiation treatment for *Grapholita molesta* under hypoxia (2010)
 - PT 12: Irradiation treatment for *Cylas formicarius elegantulus* (2011)
 - PT 13: Irradiation treatment for *Euscepes postfasciatus* (2011)

- PT 14: Irradiation treatment for *Ceratitis capitata* (2011)
- PT 15: Vapour heat treatment for *Bactrocera cucurbitae* on *Cucumis melo* var. *reticulatus* (2014)
- PT 16: Cold treatment for *Bactrocera tryoni* on *Citrus sinensis* (2015)
- PT 17: Cold treatment for *Bactrocera tryoni* on *Citrus reticulata* x *C. sinensis* (2015)
- PT 18: Cold treatment for *Bactrocera tryoni* on *Citrus limon* (2015)
- PT 19: Irradiation treatment for *Dysmicoccus neobrevipes*, *Planococcus lilacinus* and *Planococcus minor* (2015)
- PT 20: Irradiation treatment for *Ostrinia nubilalis* (2016)
- PT 21: Vapour heat treatment for *Bactrocera melanotus* and *Bactrocera xanthodes* on *Carica papaya* (2016)

ISPM 29	<i>Recognition of pest free areas and areas of low pest prevalence</i> (adopted in 2007)
ISPM 30	<i>Establishment of areas of low pest prevalence for fruit flies (Tephritidae)</i> (adopted in 2008)
ISPM 31	<i>Methodologies for sampling of consignments</i> (adopted in 2008)
ISPM 32	<i>Categorization of commodities according to their pest risk</i> (adopted in 2009)
ISPM 33	<i>Pest free potato (Solanum spp.) micropropagative material and minitubers for international trade</i> (adopted in 2010)
ISPM 34	<i>Design and operation of post-entry quarantine stations for plants</i> (adopted in 2010)
ISPM 35	<i>Systems approach for pest risk management of fruit flies (Tephritidae)</i> (adopted in 2012)
ISPM 36	<i>Integrated measures for plants for planting</i> (adopted in 2012)
ISPM 37	<i>Determination of host status of fruit to fruit fly (Tephritidae)</i> (adopted in 2016)

ANNEX 2: IPPC Strategic Framework 2012-2019

(CPM-7 (2012) Report, Appendix 6)

Executive summary

The International Plant Protection Convention (IPPC) is a critical instrument for promoting joint actions, international cooperation and leadership in the plant protection area. The IPPC will become increasingly important in the years ahead as the primary international framework for addressing the challenges posed by globalization and the transboundary movement of injurious plant pests and diseases, collectively called pests under the IPPC.

To meet the challenge of protecting global plant resources – including agriculture, forests, natural habitats, biodiversity, and food production – there is an urgent need to strengthen the infrastructure supporting the IPPC to help prevent the spread of plant pests. In particular, the IPPC needs to strengthen its capacity to generate international standards; establish and promote effective information exchange systems among members; address the technical capacity of all member countries to implement the convention and adopted standards, especially developing member countries; and provide a sufficient and sustainable administrative support structure to meet its members' needs and priorities.

National plant protection organizations (NPPOs) are facing a similar challenge. The rapid growth in the volume and diversity of food and agricultural products in international trade is creating significant new demands on plant protection officials which are proving difficult to meet.

The vision of the IPPC is: *Protecting global plant resources from pests.*

The mission is: To secure cooperation among nations in protecting global plant resources from the spread and introduction of pests of plants, in order to preserve food security, biodiversity and to facilitate trade.

The strategic objectives are to:

- A. protect sustainable agriculture and enhance global food security through the prevention of pest spread;
- B. protect the environment, forests and biodiversity from plant pests;
- C. facilitate economic and trade development through the promotion of harmonized scientifically based phytosanitary measures; and
- D. develop phytosanitary capacity for members to accomplish A, B and C.

A key to achieving the objectives in this strategic framework will not only be members' commitment to global collaboration through the IPPC but more significantly the willingness of governments and perhaps non-governmental stakeholders to support and help fund IPPC programmes and infrastructure in the years ahead.

Introduction

Today, the International Plant Protection Convention (IPPC) has become particularly significant and relevant in the light of evolving phytosanitary risks associated with the spread of pests, and the need to protect plant resources and biodiversity, to ensure food security, and to support the safe expansion of global trade and economic growth opportunities. However, a gap exists between the role the IPPC can and should play in global plant protection and the actual resources available to it to meet these new international challenges.

The ubiquitous and growing threats posed by plant pests to agricultural and rural communities, to plant biodiversity and to natural habitats and ecosystems around the world remain major problems

to agriculturalists, foresters and conservers of the environment. New pests are constantly being identified and known pests are becoming more widespread and damaging because of trade and climate change, so the battle with pests is on-going. In addition, in the global context, new challenges constantly appear which change the functional environment of the IPPC and demand new responses from the Commission on Phytosanitary Measures (CPM).

The IPPC's strategic objectives for the next 8 years take into account this changing global context, and encompass key IPPC initiatives and actions that are designed to support the world's needs and demands for:

- a safe and secure food supply,
- a protected environment,
- sustainable trade and economic growth, and
- a coordinated capacity development programme.

Ultimately, combined with its recognition by the World Trade Organisation (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures as the international standard setting body responsible for plant health standards, delivering on these objectives will lead to the IPPC being recognized and valued around the world as the premier international framework for protecting agriculture and the environment from plant pests, ensuring global food security, and fostering safe trade and economic growth opportunities for all member countries. The key to achieving these objectives will be the members' commitment to global collaboration through the IPPC and a willingness to support IPPC programmes and infrastructure in the years ahead.

With respect to protecting plant resources, the IPPC contributes to:

- protecting farmers and foresters from the introduction and spread of new pests;
- protecting food security;
- protecting the natural environment, plant species and diversity;
- protecting producers and consumers from costs associated with combating and eradicating pests.

The International Plant Protection Convention

The IPPC was agreed in 1951 and is the primary international treaty for protecting global plant resources (including forests, non-cultivated plants and biodiversity) from plant pests and for facilitating the safe movement of plants and plant products in international trade. The IPPC is deposited with and administered through the Food and Agriculture Organization of the United Nations (FAO). Today, the IPPC consists of 175+ contracting parties and other countries which voluntarily adhere to the Convention.

The Convention was amended in 1979 and 1997. The amendments of 1997 were particularly significant in that they included provisions for a Secretariat, a Commission on Phytosanitary Measures (governing body) and a phytosanitary standard setting mechanism. Since 1997, the demands on the IPPC for increased work in developing plant health standards, providing technical assistance, and providing global pest information have increased at a rate that has far outstripped its resources and funding. After 60 years of the implementation of the IPPC, the work programme has matured and a new phase of the IPPC implementation needs development.

Plant Pests

The introduction or outbreak of plant pests has significantly affected food security and/or had significant negative economic impact (see Box 1). A vast range of plant pests and diseases (collectively called pests under the IPPC) threaten global food production (including animal feed), the culture of forests and the wild flora of the natural environment. Some historical impacts of plant pests are well known, such as *Phytophthora infestans* on potatoes in Ireland, *Hemileia vastatrix* on coffee in

Sri Lanka and Brazil, *Viteus vitifoliae* on grapes in Europe and the United States, *Microcyclus ulei* on rubber in Brazil, *Puccinia graminis* on wheat in North America, *Ophiostoma ulmi* on elm in Europe and the United States and *Lymantia dispar* in the forests of the west coast of North America.

Although the impacts of pests range from negligible to extremely high, it is often difficult to fully assess these impacts. If pests can be prevented from establishing in an area, the resources used in prevention are invariably significantly lower than those needed for long-term control, containment, eradication (if possible) after introduction, or the consequences of doing nothing.

Box 1: Examples of major pests not previously recorded in an area

Prostephanus truncates, the larger grain borer, was accidentally introduced from Central America into Tanzania in the late 1970s, and spread to other countries in the region. In West Africa it was first found in Togo in the early 1980s. It has now spread to many African countries becoming the most destructive pest of stored maize and dried cassava in both West and East Africa. In the more tropical countries of Africa, the larger grain borer destroyed up to 70–80 percent of stored maize grains and 30–40 percent of cassava. The IPPC is now working on an International Standard for Phytosanitary Measures (ISPM) on the international movement of grain which may help to reduce the risk of the occurrence of this type of pest introduction.

Anoplophora glabripennis, the Asian longhorned beetle (ALB), is considered an invasive species in North America, because it is a serious threat to many species of deciduous hardwood trees. This pest arrived in North America in the 1980s in wood packing material. If it becomes established in the United States it could have a significant impact on natural forests, the forest products industry, and urban environment, with an estimated death toll of 1.2 billion trees if it were to spread nationwide. In the eastern USA alone, four million jobs depend on forests that are vulnerable to the ALB. The IPPC introduced ISPM 15: 2009 "[Regulation of wood packaging material in international trade](#)" to minimize the likelihood of such a pest introduction through wood packaging again.

Puccinia graminis tritici, Ug99. The risk posed by this fungus that is deadly to the world's second largest crop, wheat, continues to rise. The killer fungus, Ug99, causes stem rust disease, which can destroy entire wheat fields. Two new aggressive forms of the fungus were found in South Africa for the first time in 2010, raising concerns that it could spread. More than a billion people in developing countries rely on wheat for their food and income. (See <http://pulitzercenter.org/blog/untold-stories/global-threat-wheat-killer-rises>.) The search for resistance could be mentioned but the threat and impact will continue for many years and could cause devastation in many countries.

***Liberibacter* spp.** Huanglongbing, also known as citrus greening disease, is considered the worst disease of citrus caused by a vectored pathogen. Transmission is by *Diaphorina citri*. The disease has affected crops in China, India, Sri Lanka, Malaysia, Indonesia, Myanmar, the Philippines, Pakistan, Thailand, Japan (the Ryukyu Islands), Nepal, Mauritius, and Afghanistan. Areas outside Asia have also reported the disease, including Saudi Arabia, Brazil and, most recently, the United States, Mexico, Belize and other countries in Central America. Citrus greening greatly reduces citrus production, destroys the economic value of the fruit and kills trees.

Lobesia botrana, European grapevine moth (EGVM), is the number one pest of grapes where it has been introduced. It is a pest of economic importance in Europe, the Mediterranean, southern Russia, Japan, the Middle East, Near East, and the northern and western areas of Africa. It has been reported from the wine areas of Chile (2008), the United States (California) (2009) and Argentina (2010). Without control, crop damage can be significant, in some cases leading to losses of 80–100 percent. A preliminary economic analysis of California shows that the presence of EGVM will severely impact grape and stone fruit production in that state, impacting local communities, the state's economy, and domestic and international trade with reduced availability of fresh and processed commodities. In California alone, grape production threatened by this pest was valued at USD 2.9 billion in 2008. The Chilean government since its first detection in the country (2008) has carried out a programme of official control of the pest with a budget of approximately USD 10 million annually.

Ceratitis capitata, Mediterranean fruit fly, is a significant pest of fruit and vegetables, having an enormous negative impact on horticultural production. It was detected in Mexico for the first time in 1977. A Mexico-United States programme was established the following year to prevent further introductions from Central America. Without the on-going control and eradication programme in place in Mexico, potential losses would be around USD 4.2 million in lost fruit and vegetables and costs of pesticides needed to manage this pest. In addition, there would be an estimated USD 25.8 million in lost export sales and USD 17.5 million in indirect impacts (diminished public health in the rural areas, lost employment in the horticultural sector, and environmental harm).

Global Context for the Strategic Framework

The world has changed significantly since the IPPC first came into force in 1952. The broad policy issues and international trends likely to influence or constrain regulatory policies and the programmes which will affect international plant protection in years to come are varied and complex. They largely arise from four main themes: the global economic and trade situation; environment and natural resources (including climate change); demographic trends; and food security. The regulatory policy and phytosanitary challenges ahead are shaped by these issues.¹⁵⁷

Global Economic and Trade Situation

In addition to current globalization issues, trade analysts have noted major changes in trading patterns in recent years. In several countries consumer demand has diminished; cash, investor confidence, credit and consumption have decreased, with a chilling effect on international trade. The global financial crisis has caused a number of countries to become more inwardly focused and concerned about their domestic employment and fiscal situation.

In the future, to maintain and create jobs, it is expected that many governments will continue to look to foreign markets and promote exports as part of their broader economic growth strategy. In parallel, countries that have not traditionally been heavy exporters are expected to be new sources of fast-growing, value-added agricultural and food products. Developing economies are emerging and will continue to emerge in Africa, Asia, Latin America and other regions and have increasing influence on global economic policies.¹⁵⁸

Trade is expected to expand as trade capacity and interest increases among nations, including marketing opportunities that benefit rural and agricultural sectors within countries. This continued reliance on international and regional trade for stimulating economic growth, including trade in food and agricultural products, will put increasing pressure on the IPPC and national plant protection organizations (NPPOs) to effectively manage the pest risks inherent in these new or expanding trade flows as well as to develop the necessary international standards, knowledge base and technical guidance to ensure safe trade. In addition, the reduction in the role of governments will increase the need for private sector involvement and management.

Environment and Natural Resources

The impact of climate change in the 21st century is likely to be wide-ranging. The situation is complex but a number of factors are worth mention:

Whatever approach governments take to the challenge of climate change, policies to minimize harm to the environment will be a priority but these would have to be balanced with the need to maintain and expand sustainable food production in order to ease poverty and feed their populations.

Governments of an increasing number of countries are seeking domestic energy security through alternatives to fossil fuels, including through the production of biofuels.

The ozone damaging effects of methyl bromide are now well known and documented, and alternative phytosanitary measures are encouraged (see IPPC Recommendation 1).

The options of chemical treatments for pest management will be considerably reduced when taking into account their impacts on the environment and natural resources.

The need to ensure effective and efficient use of water in agriculture could influence where and what type of food is being produced.

¹⁵⁷ A broader overall context is described in *The Director-General's medium term plan 2010-13 and programme of work and budget 2010-11* (Paper C 2009/15 for the Thirty-sixth Session of the FAO Conference, 18–23 November 2009) and in the *Strategic Framework 2010-2019* (Paper C 2009/3 for the above Conference).

¹⁵⁸ United Nations/FAO Report cited by *New York Times* article (25 January 2010).

This increasing concern with climate change and protecting the environment will compel the IPPC and NPPOs to be increasingly aware of the potential changing distribution of pests with the changing climate. The promoting of environmentally friendly measures to reduce the effects of plant pests on food production and the environment and to allow the safe movement of commodities in trade will be needed.

Demographic Trends

Increasing urbanization and rural migration to cities is a global demographic trend. This large-scale shift from rural to urban living may jeopardize the productivity of rural communities, a matter that national governments may seek to address through rural development programmes emphasizing sustainable, safe and locally produced and marketed foods and other plant products.

Population growth rates in developing countries are generally greater than those of developed countries. Over the next 30 years, economic power will shift to developing countries where the future global middle class and consumers will be found.¹⁵⁹

These demographic shifts, including migration, are expected to alter the food and dietary cultures in countries around the world resulting in new patterns of food consumption and food demands. The shifts will result in new types of food products, including horticultural goods, being shipped, legally and illegally, to new markets and locations.

Food Security

Food security – the availability of and access to adequate food supplies – has many dimensions, including climate change, plant pests (including invasive alien species), trade, food aid, new production technologies and rural development. The trend of increased land utilization by emerging nations will further impact on food security, particularly in the developing world where phytosanitary regulatory frameworks lack capacity. Food aid will continue to feature high on the agenda of countries and international organizations as a humanitarian response to disasters around the world.

Developed countries are being encouraged to pursue opportunities for capacity development, technical assistance and trade promotion¹⁶⁰. However, increasing trade, rather than aid, should lead to greater independence and wealth in developing countries. National regulatory agencies may expect increasingly to be called upon to provide expertise in areas such as capacity development, pest and disease control, marketing and trade, use of new (manufacturing) technologies, and in this way, contribute to the global food security agenda. However, if developing countries are not adequately prepared to meet demands for these services their ability to contribute to the global food security agenda will continue to be compromised.

The growing food security concerns and the availability of future food to growing populations around the world present massive problems to many countries. But the IPPC can play a substantive role in developing the capacity of countries to monitor and respond to plant pest risks, thereby providing a key line of defence in safeguarding that country's food supply.

Access to Scientific Competence and Information

A problem affecting many countries is the decreasing availability of the scientifically based phytosanitary expertise that is vital for sustaining public policy components of agricultural and trade development. A large part of this is the so-called taxonomic impediment, which refers to the shrinking

¹⁵⁹ Goldstone, Jack A. 2010. The new population bomb. *Foreign Affairs* (January /February issue, 2010), page 38.

¹⁶⁰ WTO SPS Agreement, Article 9, “Technical Assistance”, which states “Members agree to facilitate the provision of technical assistance to other Members, especially developing country Members”, and the Doha Development Round.

government investment in staff, funds and training that has led to a loss of taxonomic expertise, tools and services. This not only affects phytosanitary services but also the diagnostic services involved in the protection of the environment and biodiversity. The members of the Convention on Biological Diversity (CBD) have set up a funding system, the Global Taxonomy Partnership Fund, to increase funding to strengthen the institutional delivery of taxonomic services. (Box 2 provides references discussing the problem of phytosanitary competence.)

Box 2: Sources of information concerning phytosanitary expertise

Rassmann, Kornelia & Smith, Richard. 2011. *Business plan for the preparatory phase of The Global Taxonomy Partnership Fund.* CBD, UNEP/CBD/GTI-CM/11/INF/2, 27 May 2011 (available from <https://www.cbd.int/doc/meetings/gti/gticm-11/information/gticm-11-inf-02-en.pdf>).

European Plant Protection Organization (EPPO). 2004. Plant Health Endangered – State of Emergency (“Madeira declaration”); declaration by EPPO Council Colloquium, Madeira, September 2004 (refer *EPPO Bulletin*, 40 (2010): 127).

Miller, Sally A., Beed, Fen D. & Harmon, Carrie Lapaire. 2009. Plant disease diagnostic capabilities and networks. *Annual Rev. Phytopathol.*, 47: 15–38.

The IPPC can play a critical role in terms of providing a global venue where networks, partnerships, and associations can be developed as they relate to scientific and phytosanitary expertise and resources. Through such networks, IPPC member countries can seek out and leverage phytosanitary expertise that may be available in other institutions or other countries or regions.

In addition, the IPPC provides knowledge management services to:

- Allow national governments, regional plant protection organizations (RPPOs) and the Secretariat meet their reporting obligations as determined by the IPPC;
- Support policy and decisions makers;
- Improve access to scientific information;
- Objectively analyze national capacities and global trends;
- Improve transparency and trust between trading partners;
- Provide the information management needs for the whole of the IPPC work programme.

Regulatory Policy Challenges

With increasing volumes and diversity of trade, new and emerging market access opportunities, and decreasing human and financial resources to carry out phytosanitary regulatory programmes, NPPOs will need to concentrate their efforts on reviewing existing policies to meet the changing global context and risks. Such efforts to review and update national phytosanitary policies will also help ensure continued public confidence in plant protection regulations and programmes at the national level, and provision of resources to fund those programmes.

At the same time private stakeholders should be more involved and accept responsibility for phytosanitary issues. Both the government and the industry should have strong incentives for adopting risk-limiting behaviour. Closer collaboration between government and industry could lead to better prospects of tackling the raising plant health risks posed by globalization and climate change. In general, plant health policy frameworks should take into account efforts made by growers and traders in activities that contribute to protection of plant health when applying official tasks. In this way governmental resources could be used more effectively, paying most attention to areas of highest risk. This could also be an incentive for growers and producers to pay more attention to plant health issues and more responsibility in sharing between public and private sector. In the interaction between government and stakeholders other than legal instrumentation could be considered.

Increasing concerns about environmental protection, invasive alien species, and threats to biodiversity mean that environmental protection is an increasingly influential factor in trade and plant

production policy. Policy shifts may be expected as interest in protecting natural plant resources and the broader agro-ecosystem gains attention in national governments and at the international level.

With the potential phasing-out of methyl bromide under the Montreal Protocol, NPPOs are increasingly turning to combinations of alternative pest management measures (e.g. systems approaches). These integrated approaches are being used more widely to counter increasing public concern on human health and on environmental grounds about traditional pesticide-based means of dealing with pest outbreaks and to allow countries to meet their obligations under the Montreal Protocol.

Specifically from a plant protection point of view, new technologies will provide NPPOs with more tools to facilitate inspections and certification of commodities, improve pest diagnosis, and enhance the traceability of commodities and rapid and effective communication. Regulatory policies should encourage the use of these tools.

Diminishing Resources for Collective Action

Since 1997, demands on and expectations of the IPPC and its Secretariat have increased at a rate that has outstripped the resources and funding available to advance the CPM agreed collective action needed at the global level to prevent the spread of pests and protect global plant resources.

The gap continues to widen between the role the IPPC can and should play in global plant protection and the actual resources available to it to meet the burgeoning pest and disease threats. Today's global economic situation of governmental deficits, slowed economic growth and weak job markets will continue to limit governments' ability to commit new or additional resources at the international level. These global economic realities will be a serious limiting factor for the IPPC and its capacity to implement and achieve the goals in this strategic plan.

Therefore, a key to achieving the objectives in this strategic framework will not only be members' commitment to global collaboration through the IPPC but more significantly the willingness of governments and perhaps non-governmental stakeholders to support and help fund IPPC programmes and infrastructure in the years ahead.

The IPPC within FAO' Strategic Framework

The FAO Constitution (Articles I and XIV) identifies FAO's major role as a neutral forum for members to negotiate international instruments. These include multilateral agreements, codes, good practices, international standards, action plans, or other collective measures necessary to achieve a common goal (poverty and hunger reduction) or purpose in global agriculture (sustainable agricultural production and protection of food security) or the conservation and protection of the world's natural resources.

This core function as a neutral global forum facilitates and supports contracting parties' efforts to develop regional and international legal instruments and implementation of their resulting national obligations. The IPPC is one such legal intergovernmental instrument in FAO, which brings phytosanitary (plant health) officials from around the world to work together to prevent the spread of pests and protect global plant resources.

FAO's three overarching global goals are:

- **reduction of the absolute number of people suffering from hunger**, progressively ensuring a world in which all people at all times have sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life
- **elimination of poverty and the driving forward of economic and social progress for all**, with increased food production, enhanced rural development and sustainable livelihoods

- **sustainable management and utilization of natural resources**, including land, water, air, climate and genetic resources, for the benefit of present and future generations.

The IPPC, as an FAO Article XIV body (Article XIV includes conventions developed and accepted by FAO members and funded by FAO), plays a critical role in supporting each of these overarching goals through its programmes, standards, and actions aimed at preventing food losses and protecting natural resources from the ubiquitous threat of plant pests. An aspect of the mandate of the IPPC is an integral part of the strategic objective entitled Sustainable intensification of crop production of the FAO Strategic Framework.

Core FAO functions as they relate to facilitating and supporting intergovernmental cooperation and joint actions are also reflected in the primary activities of the IPPC, specifically those relating to:

- (1) stimulating the generation, dissemination and application of information and knowledge, including statistics i.e. knowledge management;
- (2) negotiating international instruments, setting norms, standards and voluntary guidelines, supporting the development of national legal instruments and promoting their implementation;
- (3) promoting technical support for technology transfer; catalyse change; and develop capacity, particularly for rural institutions; and
- (4) undertaking advocacy and communication, to mobilize political will and promote global recognition of required actions in areas of FAO's mandate.

Each of the primary functions above is reflected in the IPPC's programme of work as a major contribution to the global food security agenda. This includes:

- (1) knowledge management, including information exchange, related to pest occurrence, outbreaks, and sharing of other official plant protection information among countries;
- (2) international standards for plant health (recognized by the WTO as science-based benchmarks to guide safe trade in plant commodities) and guidelines for the safe expansion of trade in food and agricultural commodities;
- (3) capacity development aimed at helping countries safeguard their and their neighbours' plant resources;
- (4) advocacy of the IPPC to raise its profile and influence among contracting parties on managing the global pest situation; and
- (5) non-binding phytosanitary dispute settlement forum for members.

FAO recognizes in its medium-term plan 2010–2013 the development and implementation of internationally recognized standards and action plans, including the preparation of draft standards for technical review and their development at the intergovernmental level. This is dependent upon the IPPC Secretariat support to the appropriate bodies. In other words, sufficient and sustainable IPPC Secretariat staffing is a prerequisite for achieving the IPPC and FAO's strategic goals. The IPPC Secretariat plays a vital and necessary role in supporting the development of international plant health standards, the implementation of an active information exchange programme among members, the implementation of capacity development and training programmes, and a non-binding dispute settlement service.

FAO provides core funding for the IPPC but in addition, a resource mobilization programme is essential to ensure sustainable and adequate resources for a professional base of IPPC Secretariat staff that can adequately and sustainably deliver the IPPC work programme. The agenda of the IPPC will be influenced by the changing global economic and trade situation, environment and natural resources considerations, demographic trends, food security policies and priorities and regulatory policy challenges. The governing body of the IPPC (the CPM) and the IPPC Secretariat will continue to

strive to prioritize its work and adopt new tools related to monitoring and evaluating its programmes and activities for maximum efficiency and best results.

IPPC STRATEGIC FRAMEWORK

The IPPC has been and remains a key FAO instrument among its members for ensuring food security, conservation of plant resources, and phytosanitary capacity development. This IPPC strategic framework brings the IPPC's activities into closer alignment with the FAO strategic goals and the new FAO Results Based Management (RBM) system.

Vision of the IPPC

Protecting global plant resources from pests.

Mission of the IPPC

To secure cooperation among nations in protecting global plant resources from the spread and introduction of pests of plants, in order to preserve food security, biodiversity and to facilitate trade.

Strategic objectives

The IPPC's strategic objectives for 2012–2019 are to:

- A. *protect sustainable agriculture and enhance global food security through the prevention of pest spread;*
- B. *protect the environment, forests and biodiversity from plant pests;*
- C. *facilitate economic and trade development through the promotion of harmonized scientifically based phytosanitary measures; and*
- D. *develop phytosanitary capacity for members to accomplish a), b) and c).*

The strategic objectives and the means for accomplishing them over the next 8 years are described below. Each strategic objective has a number of organisation results to be achieved. The success in the delivery of these results will depend on whether appropriate and sufficient resources are available. Within the framework of the IPPC the RPPOs play a critical role in advancing the implementation of the convention at a regional level. The RPPOs are important partners to the IPPC in terms of developing concrete actions in the prevention of spread of pests that can affect agriculture, food security and biodiversity and in the implementation of capacity building programmes. For this reason an effective partnership with RPPOs is essential for achieving the following strategic objectives.

A. *Protect sustainable agriculture and enhance global food security through the prevention of pest spread*

The projected population growth (and better income prospects in many areas) will spur higher demand for food now and in the future. Demographic trends may exert pressure on the food security situation globally but particularly in developing regions, such as those in sub-Saharan Africa. Overall, FAO estimates that global agricultural output needs to expand by about 70 percent to meet the food needs of the population expected in 2050. Crop production is expected to continue to account for over 80 percent of the world's food. Over 70 percent of the crop production increase needed to achieve this will have to come from intensification on existing or shrinking arable land area, while not compromising the capacity to produce even more food in the medium term. Crop production intensification strategies must be more sustainable than current or historical ones i.e. they must value and enhance ecosystem services such as soil nutrient dynamics, pollination, pest population control, and water conservation. They must also build on elements that include integrated pest management, conservation agriculture, access to and sustainable use of plant genetic resources, while also reducing soil, air and water pollution. Countries and regions must enhance their capacities to monitor, detect,

and prepare rapid responses to pest outbreaks, so that these pests do not threaten other regions and trading partners.¹⁶¹

Fully functioning NPPOs and RPPOs safeguard agriculture, environment and natural resources from the negative impacts of pests, and thereby contribute to enhanced food security and open up trade opportunities for countries. In close cooperation with relevant stakeholders an effective national system for the prevention of the introduction and spread of pests needs to be in place, based on the shared responsibilities of both government and the private sector. For this reason, the IPPC and International Standards for Phytosanitary Measures (ISPMs) provide the framework for the effective operation of an NPPO or an RPPO, e.g. the establishment and operation of an import regulatory system, how to conduct pest risk analysis, and guidelines for surveillance, pest status and pest eradication. The ISPMs also include diagnostic protocols that facilitate the identification of major pests of plants and plant products as well as treatments or integrated measures to provide pest management options. In the future it is expected that standards will increasingly become more commodity- and pest-specific.

The International Phytosanitary Portal (IPP – <https://www.ippc.int>) is the core tool for information exchange of the IPPC. While providing the information management needs for the whole of the IPPC work programme, it specifically provides information, through a pest reporting system, on the incidence of pests of plants and plant products. Planned developments will enhance pest alert communications among members through increased capacity and access to electronic reporting systems including through RPPOs.

This strategic objective will strongly support the FAO objective of improving the sustainable intensification of crop production.¹⁶²

Organizational results

A1 – Pests are detected, reported and eradicated or controlled by means of improved inspection, monitoring, surveillance, diagnosis, pest reporting and pest response systems.

A2 – NPPOs are assisted in managing pest problems, for improving sustainable intensification, with the production of technical resources on standards implementation where appropriate. Information on such management programmes is shared between countries.

A3 – The movement of food commodities and basic horticultural products is facilitated by relevant ISPMs.

A4 – Food security is enhanced by aligning the IPPC capacity development strategy on developing national phytosanitary capacity with FAO and other programmes.

B. Protect the environment, forests and biodiversity from plant pests

There is an increasing awareness of the importance of invasive alien species, which can and do have a significant and devastating impact on the terrestrial and marine and freshwater environments, agriculture and forests. Whereas the CBD addresses biodiversity and the environment in general, the IPPC deals specifically with those invasive alien species that are pests of plants and provides guidance for protection against them.

¹⁶¹ FAO. FAO Strategic Framework for 2010–2019.

¹⁶² FAO. 2011. Save and Grow: a policymaker's guide to the sustainable intensification of smallholder crop production. Rome, Italy.

The IPP provides the means for countries to provide and share basic phytosanitary information such as national pest lists. This type of information enables regulatory agencies to undertake risk analyses and establish measures where necessary.

The usefulness and visibility of the IPP, will be expanded to share IPPC-related information among member countries and stakeholders about recommended phytosanitary practices for specific kinds of crop, pest control measures, research findings, other national pest-related information and other related FAO/Partner information. The pest reporting system within the IPP supplies essential information, and is of significant value to environmental protection agencies, and this system will be expanded with time and resources.

The IPPC standards and the IPPC framework can be applied to address the needs of the environmental community as it relates to plant biodiversity and emerging problems associated with invasive alien species that are plant pests. The IPPC standards on pest risk analysis, for example, can be essential and important tools for the assessment of environmental pest risks when applied.

The IPPC Secretariat and its members work with their counterparts in the Convention of Biological Diversity (CBD) to identify common issues and develop standards and other means to address problems of interest to both organisations.

Many other ISPMs have elements directed to protection of biodiversity, for example, the standard concerning the treatment of wood packaging material is aimed at risk limitation of tree pests that can affect biodiversity or commercial forests. The IPPC is proposing the development of a number of other standards dealing with the potential movement of invasive alien species important to the protection of biodiversity. These will deal with minimizing pest movement by sea containers and air containers and reducing the pest risk of waste material from ships.

Capacity development programmes dealing with environmental challenges will be included in the support programmes developed by the IPPC Secretariat.

Organizational results

B1 – The environment protection and forestry sectors, both domestically and internationally, is provided with sufficient information and tools concerning new pests and their distribution. The knowledge management tools will include pest risk analysis assistance and pest management techniques.

B2 – NPPOs and RPPOs are supported in recognizing that protection of wild plants and biodiversity is part of their responsibilities and cooperate with agencies working in the environmental sector.

B3 – Appropriate standards, recommendations and other technical resources that underpin the protection of the environment and help to limit the impact of climate change are developed.

B4 – Countries are able to protect their natural plant resources against pests as supported by capacity development.

C. Facilitate economic and trade development through the promotion of harmonized scientifically based phytosanitary measures

Trade is an increasingly important part of many national economies, and trade-related capacity development and standards development need to be strengthened to help countries define their policies and develop systems to take advantage of new trade opportunities. At the same time, the rising import dependency for some developing countries means that they need effective regulatory systems or frameworks to safeguard their agriculture and the environment.

The IPP contains market access-related information for the export of plants and plant products. For the development of viable export systems, a functioning NPPO is needed to ensure that phytosanitary import requirements are met. ISPMs provide guidelines on pest lists, pest status, the

establishment of pest free areas, pest free places of production and production sites, and areas of low pest prevalence. ISPMs also describe export certification systems and the use of phytosanitary certificates. ISPMs for specific pests and specific commodities could relieve NPPOs of the need to conduct PRAs and recommend phytosanitary measures for specific plant products, and thus facilitate safe trade amongst countries. The development of an electronic IPPC certification system is being pursued.

The standard setting system, in particular how it develops and adopts diagnostic protocols and phytosanitary treatments, has been criticized for its slowness. The IPPC keeps the process under review with the intent to develop more efficient procedures for standard setting.

Regarding capacity development, the setting up of efficient and recognized systems for the export of plant material, with surveillance and inspection systems and appropriate phytosanitary certification, is a most effective means of assisting a developing country to develop and maintain an export industry.

The IPPC has a major role in the WTO-SPS framework and works on areas of common interest with the World Animal Health Organisation (OIE) and Codex Alimentarius in respect of the implementation of standards which facilitate trade.

ISPMs also provide guidance on the establishment of import verification systems. Capacity development is essential in this area to ensure safe trade and the protection of agriculture and the environment from the introduction of new pests that could negatively impact national food security.

Import or export requirements can be an area of disagreement between countries. The dispute settlement systems of the IPPC could help resolve such challenges.

Organizational results

C1 – Countries evaluate and upgrade their phytosanitary certification systems to take account of the revised standards.

C2 – Safe trade is facilitated by the provision in the IPPC of a forum for discussion of plant health issues and by the development of pest-specific or commodity-based ISPMs along with associated phytosanitary measures.

C3 – Consultative mechanisms in the dispute settlement systems are utilized and reported.

D. Develop phytosanitary capacity of members to accomplish a), b) and c)

The increased participation of smallholders in value chains can contribute significantly to poverty reduction and rural development. Any reduction in production losses underpins the success of these value chains. For example, it is imperative to guard against pest attack, to reduce the costs of protection of crops from pest outbreaks, and to eliminate product contamination that could prohibit or complicate market access. Continual improvements in plant protection and import and export systems are imperatives for developing countries to capture trade opportunities.

This frequently includes the development of a fully functioning and sustainable NPPO. To do this requires information, training, and resources such as laboratories and equipment. The IPPC has developed the phytosanitary capacity evaluation (PCE) tool that helps countries assess their phytosanitary capabilities and needs and plan their own development priorities. Assistance to developing countries to enhance their participation in the IPPC activities, including the IPPC Standard setting process and information exchange, is provided by the IPPC in the form of their funded attendance at workshops and meetings. Regional workshops on draft standards are held each year to allow officials of developed and developing countries to discuss the draft ISPMs that are in the development phase. The IPPC has recently adopted a long-term strategy for capacity development. This is receiving strong support and is being guided by a team made up of representatives from each FAO region.

The IPPC has developed an Implementation Review and Support System (IRSS) which includes a review of the implementation of the IPPC and ISPMs by members (using a triennial

questionnaire and feedback system) and an “IPPC Help Desk” that is made available to IPPC members.

Organizational results

D1 – Developing countries are assisted in capacity development programmes by identifying their needs and priorities using a Phytosanitary Capacity Evaluation tool.

D2 – Countries cooperate and collaborate with aid agencies to develop capacity development programmes in developing countries by means of mechanisms established by the IPPC.

D3 – The Implementation Review and Support System is fully implemented. This provides information on the implementation of the IPPC and its standards, and the challenges that members are dealing with, including problems with the implementation of standards.

D4 – Information resources are made available to allow countries to improve national phytosanitary capacity.

Functional objectives

X Effective collaboration with members and stakeholders

This functional objective links the services provided by the IPPC and its Secretariat to the organizational results by cooperation with sponsors, members supporting the IPPC trust fund, members providing assistance in kind and by means of effective liaison all those involved in capacity development programmes.

Raising the awareness among, and appropriate engagement of, stakeholders (e.g. relevant international organisations, industry, forestry agents, traders, the general public) is of vital importance to increase the sense of urgency and responsibility of all partners involved to protect the world’s plant resources against plant pests.

Organizational results

X1 – The programmes of the IPPC are sustainably funded as a result of an effective resource mobilization strategy and strong commitment from FAO.

X2 – The profile of the IPPC is raised by the development and implementation of a strong advocacy programme and dynamic communication plan.

X3 – The IPPC develops major activity based strategic plans with associated short- to medium-term plans, including the agreement of priorities, based on the strategic framework.

Y. Efficient and effective administration

The IPPC Secretariat plays a fundamental role in facilitating global dialogue and cooperation in protecting plant health. This plant protection function directly supports global food security, the protection of plant resources including biodiversity, and the safe movement and marketing of agricultural products. Hence, a top administrative and organizational priority is to strengthen the capacity of the IPPC Secretariat toward greater effectiveness and efficiency of the group.

Organizational results

Y1 – The Secretariat is efficient and highly productive.

Y2 – The finances of the IPPC Secretariat are well managed in a transparent and informative manner.

Y3 – The IPPC analyzes, and if appropriate, develops and exercises a degree of greater financial and administrative authority while remaining within the framework of FAO.

Y4 – The IPPC expands the IPP to support all agreed activities of the IPPC work programme, particularly advocacy, resource mobilization, standard setting, information exchange and capacity development.

Core functions

The core functions of the IPPC are:

- A. setting standards and recommendations and technical guidance including diagnostic protocols and phytosanitary treatments
- B. providing a means for the dissemination of information and knowledge on pests and phytosanitary issues
- C. coordinating the development of technical support for national phytosanitary capacity
- D. providing dispute settlement facilitation
- E. providing support for the implementation of the IPPC, and its standards
- F. undertaking resource mobilization and advocacy activities to promote the activities of the IPPC and to garner funds for these activities.

The strategic objectives, functional objectives and core functions relate closely to those of the FAO. The activities under the strategic objectives are ordered under these core functions when described in the medium-term plan.

A. **Standard Setting**

The development and adoption of standards, recommendations, diagnostic protocols and phytosanitary treatments) is currently the major role of the CPM and the IPPC Secretariat. FAO provides a neutral forum for members to negotiate such international instruments as the IPPC. IPPC standards are recognized by the World Trade Organization (WTO) as international benchmarks for trade in plant commodities.

B. **Information Exchange**

Knowledge management and dissemination includes information on pest occurrence, pest outbreaks, pest distribution, pest spread, control measures, surveillance results, emergency programmes and other technical resources. This information exchange is essential for the implementation of the Convention and its standards. The Secretariat publishes the standards and specifications, recommendations and other technical resources. The IPP is the agreed means for this purpose. Its maintenance and continued development is vital for the work of members.

Communication and advocacy are increasingly important in the work of the IPPC and this needs to become a core component of the IPPC knowledge management system that will result in increased awareness and benefits of the IPPC, and hence generate increased support for the work of the IPPC.

C. **Capacity Development**

As noted earlier, this function is essential for the implementation of the Convention and its standards, particularly so for developing countries. A long-term strategy and operational plans for capacity development has been developed to provide a comprehensive schema to use in furthering the work of the IPPC in this area.

D. **Dispute Settlement Facilitation**

Along with the development of a manual for the use of members, the Secretariat has worked informally in this area on a number of problems. Therefore, it is considered essential to retain the availability of a dispute settlement mechanism for members for possible future use.

E. **The Implementation of the IPPC, its Standards and Recommendations**

An implementation programme called the Implementation Review and Support System (IRSS) has been established. It involves two mechanisms: a Helpdesk to answer questions regarding capacity development and assist with programme development; and an assessment of the phytosanitary capabilities of countries utilizing information gathered from the PCE tool, RPPOs, IPPC Secretariat information exchange programme, and that gathered from members using a specially designed questionnaire.

F. **Advocacy and Resource Mobilization**

The development of advocacy materials and programmes is necessary for the progress of the IPPC and its standards. The IPPC has to develop a stronger profile with a much wider audience. Also, the development of mechanisms for resource mobilization is essential to develop further funding resources.

CONCLUSION: IPPC OVER THE NEXT EIGHT YEARS

Globalization has created many opportunities and challenges for farmers, foresters, plant health officials, and others involved in or concerned with food production and plant protection issues. New and changing patterns associated with international trade, climate, and demographics are expected to effect the global distribution of plant pests, thus creating new threats to food security, agricultural and rural communities, plant biodiversity, natural habitats and ecosystems around the world.

A core contribution of the IPPC to managing these global challenges is developing and maintaining an effective and credible forum where plant protection officials can communicate, debate, and cooperate in joint actions and measures to address long term and newly emerging global plant health issues. The expanding IPPC membership over the past decade reflects a majority view on the necessity and benefit of such coordination at the global level. However, this collaboration and coordination does not occur in a vacuum. Structures, systems, and mechanisms need to be established and maintained to foster these intergovernmental and international relationships. The IPPC is that key international structure for ensuring cooperation in plant health, including collaboration among contracting parties, RPPOs and other stakeholders.

Looking ahead, the IPPC contracting parties, RPPOs and the IPPC Secretariat will focus on the following key themes over the next 8 years:

1. Enhance its contribution to the global food security agenda through new and updated standards aimed at preventing pest spread in trade and active information exchange programmes related to communicating pest occurrence, outbreaks, and sharing of other critical pest information among countries.
2. Enhance IPPC actions and measures aimed at safeguarding the environment, forests, and biodiversity against plant pests. The IPPC will continue working closely with countries and other international organizations such as the CBD to address the threat of invasive alien species. IPPC standards will be developed to address the needs of the environmental community as it relates to plant biodiversity and emerging problems associated with invasive alien species which are plant pests.
3. Support the safe expansion of food and agricultural trade. Trade is an important part of many countries' economic growth strategy. The IPPC will develop the necessary standards to support and guide this expanding trade among countries as well as operate an IPPC Help Desk to assist countries develop their plant health-regulatory systems to take advantage of new regional and international trade opportunities.
4. Develop the phytosanitary capacity of members through the assessment of NPPOs' capacities and needs, and the subsequent development of prioritized assistance programmes. This will be coupled with strategies for identifying potential donor organizations involved in capacity building and development.
5. Actively review and support the broad implementation of IPPC and its standards through an Implementation Review and Support System. This includes use of the IPPC Helpdesk to assist with capacity development programmes and a mechanism to assess the phytosanitary capabilities of countries from information gathered by specifically designed means.
6. Implement cost-effective approaches to its work and adopt new approaches for prioritizing, monitoring and evaluating IPPC programmes and activities. A top organizational priority is to strengthen the capacity of the IPPC Secretariat toward greater effectiveness and efficiency of the staff.

7. Continuously explore possible additional roles of IPPC.

The evidence is clear from the growth in IPPC membership, increasing participation of countries in IPPC events and activities, and increasing interest by industry groups in the IPPC standards setting programme that countries are eager to collaborate with one another in addressing global plant protection issues and advancing the objectives of the Convention. However, achieving these goals and advancing the cause of plant protection in the years ahead will ultimately depend on commitments and priorities of governments and other parties to provide the necessary resources to the IPPC and its Secretariat to carry out this critical work.

Core criteria (information must be provided):
Contribution to the purpose of the IPPC as described in Article I.
Linkage to IPPC Strategic Objectives (SOs) and Organizational results demonstrated
Feasibility of implementation at the global level (includes ease of implementation, technical complexity, capacity of NPPOs to implement, relevance for more than one region).
Clear identification of the problems that need to be resolved through the development of the standard.
Availability of, or possibility to collect, information in support of the proposed standard (e.g. scientific, historical, technical information, experience).

Supporting criteria (information may be provided, as appropriate):
<p>Supporting criteria (Practical)</p> <ul style="list-style-type: none"> ➤ Feasibility of adopting the proposed standard within a reasonable time frame. ➤ Stage of development of the proposed standard (is a standard on the same topic already widely used by NPPOs, RPPOs or a relevant international organization). ➤ Availability of expertise needed to develop the propose standard.
<p>Supporting criteria (Economic)</p> <ul style="list-style-type: none"> ➤ Estimated value of the plants protected. ➤ Estimated value of trade affected by the proposed standard (e.g. volume of trade, value of trade, the percentage of Gross Domestic Product of this trade) if appropriate. ➤ Estimated value of new trade opportunities provided by the approval of the proposed standard. ➤ Potential benefits in terms of pest control or quarantine activities.
<p>Supporting criteria (Environmental)</p> <ul style="list-style-type: none"> ➤ Utility to reduce the potential negative environmental consequences of certain phytosanitary measures, for example reduction in global emissions for the protection of the ozone layer. ➤ Utility in the management of non-indigenous species which are pests of plants (such as some invasive alien species). ➤ Contribution to the protection of the environment, through the protection of wild flora, and their habitats and ecosystems, and of agricultural biodiversity.
<p>Supporting criteria (Strategic)</p> <ul style="list-style-type: none"> ➤ Extent of support for the proposed standard (e.g. one or more NPPOs or RPPOs have requested it, or one or more RPPOs have adopted a standard on the same topic). ➤ Frequency with which the issue addressed by the proposed standard emerges as a source of trade disruption (e.g. disputes or need for repeated bilateral discussions, number of times per year trade is disrupted). ➤ Relevance and utility to developing countries. ➤ Coverage (application to a wide range of countries/pests/commodities). ➤ Complements other standards (e.g. potential for the standard to be used as part of a systems approach for one pest, complement treatments for other pests). ➤ Foundation standards to address fundamental concepts (e.g. treatment efficacy, inspection methodology). ➤ Expected standard longevity (e.g. future trade needs, suggested use of easily outdated technology or products). ➤ Urgent need for the standard.
<p>Diagnostic protocols are subject to additional criteria. For proposals for DPs, please elaborate on the following criteria to help the future consideration of the subject proposed:</p> <ul style="list-style-type: none"> ➤ Need for international harmonization of the diagnostic techniques for the pest (e.g. due to difficulties in diagnosis or disputes on methodology) ➤ Relevance of the diagnosis to the protection of plants including measures to limit the impact of the pest. ➤ Importance of the plants protected on the global level (e.g. relevant to many countries or of major importance to a few countries).

- Volume/importance of trade of the commodity that is subjected to the diagnostic procedures (e.g. relevant to many countries or of major importance to a few countries).
- Other criteria for topics as determined by CPM that are relevant to determining priorities
- Balance between pests of importance in different climatic zones (temperate, tropics etc.) and commodity classes.
- Number of labs undertaking the diagnosis.
- Feasibility of production of a protocol, including availability of knowledge and expertise.

Draft specification:

As agreed by CPM-7 (2012) and CPM-11 (2016), submissions in answer to the call for topics (except for draft diagnostic protocols and phytosanitary treatments) should be accompanied by a draft specification.

An annotated template for the draft specification is available on the IPP (<https://www.ippc.int/en/publications/81324/>) in English, French and Spanish.

Literature review¹⁶³ (This section will provide a **summary of the topic** based on scientific and technical publications, including a referenced **list of literature reviewed**. This will help provide the scientific basis for the content of the standard to be used by the selected experts during the development of the standard).

Send submissions to:

E-mail: ippc@fao.org

(Subject line: Call for topics [year])

Address: IPPC Secretariat (AGDI)

Food and Agriculture Organization of the UN
Viale delle Terme di Caracalla
00153 Rome, Italy

¹⁶³ As agreed by CPM-7 (2012) and CPM-11 (2016).

ANNEX 4: Categories of IPPC related documents

(Noted by 2012-10 SPG, 2012-11 SC added a row for explanatory documents)

CATEGORY	OBJECTIVES	REFS	AUTHORSHIP	OVERSIGHT	CLEARANCE PROCESS
Strategies and work plans	This includes: the CPM strategic framework, which includes medium and long term plans; strategy documents for standard setting, communications, capacity building, dispute settlement and resource mobilization; the programme of work and budget; work plans.	FAO guidelines and CPM decisions	Drafted by the CPM Bureau in conjunction with the IPPC Secretariat	IPPC Secretariat, incorporated into FAO programming	Adopted by the CPM
CPM Meeting documents & report	The Secretary shall be responsible for implementing the policies and activities of the Commission and carrying out such other functions as may be assigned to the Secretary by this Convention and shall report thereon to the Commission.	Article XII.3 of the IPPC	Relevant parties	IPPC Secretariat	The report is <u>adopted</u> by the CPM at the end of each session.
CPM recommendations	CPM Recommendations are decisions and agreements made by the CPM, according to existing procedures and are intended to promote or achieve the objectives of the IPPC ¹⁶⁴ . These decisions and agreements may consist of directions, guidance, or calls to action to the contracting parties or the Secretariat or both, on matters that may not be appropriately or effectively expressed as an ISPM, on which phytosanitary measure(s) are based.	CPM-4 and 5	Relevant parties	IPPC Secretariat	The CPM process for developing and adopting <u>Recommendations</u> is much more flexible than the process for adopting ISPMs. This allows the CPM to consider the appropriate presentation for a given decision or agreement once the subject has been sufficiently analyzed and developed. A CPM Recommendation would be adopted when CPM agrees or decides to something that is relevant to the ongoing activities of all contracting parties in the

¹⁶⁴ As noted by CPM-4. See 2009 CPM-4 report, section 13.9, paragraph 193.3; CPM-10 in 2015 adopted a revised process for adopting CPM recommendations

CATEGORY	OBJECTIVES	REFS	AUTHORSHIP	OVERSIGHT	CLEARANCE PROCESS
					area of plant protection, in accordance with and within the context of the IPPC.
Procedural manual	The Procedural Manual provides the decisions, procedures and practices of the Commission on Phytosanitary Measures (CPM), its subsidiary bodies and other relevant drafting groups.	-	Compiled by the IPPC Secretariat	IPPC Secretariat	Text is taken from other documents that have previously been adopted by the CPM, ICPM, etc Developed by the Secretariat as procedure support material – <u>noted</u> by the CPM.
Other meeting documents and reports	Various meeting as at present e.g. Working Groups, Technical Consultations, SPTA, SBDS	Various	As at present	IPPC Secretariat	As at present
STANDARD SETTING					
ISPMs	International Standards for Phytosanitary Measures (i.e. any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests)	IPPC, SPS Agreement, CPM reports	Stewards and expert drafting groups who are nominated by contracting parties and selected by the Standards Committee	IPPC Secretariat in consultation with the contracting parties	These international standards are developed & <u>adopted</u> by the Commission on Phytosanitary Measures (CPM).
Specifications	Specifications serve as a terms of reference for the Expert Working Group responsible for developing an ISPM, and provide guidance on the scope of the standard and on the tasks expected of the working group.		Standards Committee	IPPC Secretariat	<u>Agreed</u> by the Standards Committee

CATEGORY	OBJECTIVES	REFS	AUTHORSHIP	OVERSIGHT	CLEARANCE PROCESS
Explanatory documents	<p>Explanatory documents on ISPMs explain what the standards apply to, and how they are employed and note any difficulties in using a particular standard. They should be seen as tools to inform, clarify difficult issues and assist in the implementation of ISPMs.</p> <p>Explanatory documents are reviewed by experts acting under the auspices of the Secretariat before publication; the draft documents are made available to the SC which may comment in the reviewing process. These documents would be published under the name of the author acting under the auspices of the Secretariat, with a clear disclaimer that these cannot be taken as an official legal interpretation of the IPPC or its related documents, and are produced for public information purposes only.</p>	ICPM-6 (2004) report	Experts acting under the auspices of the Secretariat	IPPC Secretariat	Cleared by the author under the auspices of the Secretariat
COMMUNICATIONS					
Advocacy material	<p>Improve the image and recognition of the IPPC and the importance of the trans-boundary movement of pests.</p> <p>Wide range of topics and media formats (e.g. electronic, print or video), some general but also a considerable amount developed with specific audiences in mind e.g. resource mobilization or education.</p>	CPM, communications, resource mobilization, standard setting and capacity development strategies	Various	IPPC Secretariat and when appropriate Bureau.	Agreed by the Secretariat and the Bureau consulted when appropriate
News	<p>Improve the image and recognition of the IPPC and the importance of the trans-boundary movement of pests.</p> <p>News, press releases, case studies, project updates, donor news</p>	Communications strategy	Various staff in the IPPC Secretariat and outside partners as appropriate	IPPC Secretariat	Approved by the relevant Secretariat team leaders who may wish to consult more widely depending on the subject and content.

CATEGORY	OBJECTIVES	REFS	AUTHORSHIP	OVERSIGHT	CLEARANCE PROCESS
TECHNICAL RESOURCES					
Good Phytosanitary Practices manuals operational etc.	These are operational descriptions for the practical implementation of aspects of the convention and its standards (e.g. CPM, information exchange, ISPMs e.g. inspection, national phytosanitary systems, treatments or legislation, and treatment manuals). Covers good practices phytosanitary procedures and processes that should applied in the field when completing the tasks of an NPPO, e.g. handbooks, Guide to the IPPC, Standards Setting Process, PRA, forestry, seed trade, wood packaging, the management of diagnostic systems, and participation in the IPPC.		Various – e.g. FAO, outside experts, established committees, Subsidiary Bodies, others as appropriate, IICA, FAO Forestry, Secretariat, NPPOs, RPPOs	IPPC Secretariat, but at times external parties with involvement of the IPPC Secretariat where appropriate	These will be <u>reviewed and noted</u> by the relevant subsidiary body(ies). Primary responsibility for coordination lies with the subsidiary bodies.
Training material	To provide baseline training material that can be used as is or developed for local needs and conditions. e.g. PRA training material, PowerPoint presentations on ISPMs and information exchange. The objective is make a wide range of material in various formats available to improve access to training material and a more consistent international quality for all to use.		Selected experts in particular fields (e.g. the PRA steering committee, IICA, FAO Forestry, FAO, Secretariat, NPPOs, RPPOs) Derived from standards and other adopted texts	IPPC Secretariat	Support material developed by a wide range of people and organizations.

ANNEX 5: Explanatory documents, training guides and other supporting documentation

(As of August 2016)

The ICPM-6 (2004) noted that there is a demand for explanatory documents, manuals and similar documents to help countries implement provisions of the IPPC and ISPMs. A programme of development of explanatory documents on ISPMs started in 2004. Explanatory documents are reviewed by the SC and posted on the IPP.

Table 4: Explanatory documents

Title	Date	Author
ISPM 5 <i>Glossary of phytosanitary terms</i> (the Annotated Glossary)	2016	Beatriz Melcho
ISPM 15 <i>Regulation of wood packaging material in international trade</i>	2014	Shane Sela (lead author), Thomas Schroeder, Matsui Mamoru and Michael Ormsby
ISPM 17 <i>Pest reporting</i>	2005	Ian M. Smith
ISPM 18 <i>Guidelines for the use of irradiation as a phytosanitary measure</i>	2006	Guy J. Hallman
ISPM 20 <i>Guidelines for a phytosanitary import regulatory system</i>	2005	Alan Pemberton
ISPM 31 <i>Methodologies for sampling consignments</i>	2009	Carolyn F. Whyte

The ICPM-6 (2004)¹⁶⁵:

- *Endorsed* a policy to allow explanatory documents, training guides and similar documents to be developed and distributed under the auspices of the Secretariat.
- *Decided* that these documents be reviewed by experts acting under the auspices of the Secretariat before publication, but that the draft documents would be made available to the SC which may comment in the reviewing process.
- *Decided* that these documents would be published under the name of the author acting under the auspices of the Secretariat, with a clear disclaimer that these cannot be taken as an official legal interpretation of the IPPC or its related documents, and are produced for public information purposes only.
- *Decided* that these documents be placed on the IPP.

Explanatory documents

The purpose of explanatory documents on standards

Standards, by their nature, are often not easy documents to understand. This is not because the language is difficult or the writing is complex, but because a standard describes a particular set of activities often using specific terminology. The definition of a standard in ISPM 5 (*Glossary of phytosanitary terms*) is:

Standard: Document established by consensus and approved by a recognized body that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.

¹⁶⁵ ICPM-6 (2004), Paragraph 111.

The activities described in a standard are usually technical, aimed at a certain result, with the idea of having all who carry out this series of activities doing it the same way. Usually, this also means that those using the standard and achieving the result know precisely what they are doing. So the standard describes the set of activities but does not necessarily explain them.

This leaves those who are not experienced in the activities described in the standard without explanation of the content of the standard and of why certain activities are done the way they are. Some more detailed explanation may be given in some areas of the standards but generally this is limited. Therefore, the Interim Commission recommended that explanatory documents be made available to those who want them. Such documents would explain what the standards apply to, and how they are employed and would note any difficulties in using a particular standard. These explanatory documents should be seen as tools to inform, clarify difficult issues and assist in the implementation of ISPMs.

Form of the explanatory document

Normally, a document of 5–10 pages would be sufficient to help with the understanding of the standard. In certain cases, longer documents may be necessary. Diagrams or flowcharts may be of assistance in certain circumstances (for example to explain relationships with other ISPMs) as long as they do not introduce more questions than they answer. Presentations in the form of PowerPoint or its equivalent may well be helpful for some officials in training roles.

The name of the writer of the explanatory document will be at the head of the document.

Status and use of explanatory document

Readers of explanatory documents should recognize that these documents are written by one or several experts, and they are not standards in themselves. The expert will be familiar with the standard and with international thinking on the standard. The explanatory documents will be reviewed by the Secretariat and other experts (including the SC), and it is unlikely that they will contain contentious or incorrect statements. However, it is important that readers note that the comments of the expert are those of the expert only, and cannot be quoted as part of a standard. The Secretariat has been concerned that papers published under the auspices of the Secretariat could be regarded as an official interpretation of the standard. These explanatory documents are not official interpretations – they are the comments of the expert writer of the explanatory document only.

The content of an explanatory document

Explanatory documents will differ in some matters of form depending on the subject of the standard. Some might describe various aspects of the standard at length; others might concentrate on particular problem areas that the standard deals with, while for other standards with fewer difficulties the explanatory document might be quite short. However, whatever the length of the explanatory document, it should cover a number of basic areas. These include:

- purpose and relationships with other standards
- general form of the standard
- contents of the standard (the major headings should be listed)
- major points of concern
- references to additional explanatory material.

Purpose and relationships with other standards

This section should describe the general intent of the standard and state how it interacts with other standards.

Some standards have a section on the purpose of the standard (for example ISPM 17 and ISPM 19) but this is generally quite short. It needs to be made quite clear what the standard was written for, what problems it was meant to try to solve and what benefits might accrue from its use.

An explanatory document can discuss how a standard fits into the framework of the IPPC and how it relates to other standards. For example, the relationship of the standards on pest risk analysis (PRA), and the link between Export Certification system and Guidelines for phytosanitary certificates (ISPMs 7 and ISPM 12) would be noted. In later years, the links between a concept standard and specific standards will be able to be described (for example ISPM 6 *Guidelines for surveillance* and *Surveillance for citrus canker* (standard not completed yet)).

General form of the standard

The form of the standard relates to the requirements section of the standard, not the administration section (e.g. Adoption) or the Introduction (Scope, References, Definitions and abbreviations, Outline of requirements).

The basic structure of the standard could be commented on: for example, the three main stages of pest risk analysis in ISPM 11, the respective responsibilities of those involved in the import and release of biological control agents in ISPM 3, or the technical issues listed in ISPM 18 *Guidelines for the use of irradiation as a phytosanitary measure*, treatment, dosimetry, approval of facilities, phytosanitary system integrity etc. The reasons for the structure could be explained if not immediately obvious.

Contents of the standard

In this part of the explanatory document, the individual sections of the standard can be discussed. This might not always be necessary, and when this is the case, no explanation should be offered. However, with many standards background information could well be of great assistance to those not familiar with the activities described in the standard. This is the particular use and help of the explanatory documents.

Major points of concern

With some points in some standards it may be helpful to provide a background to the discussions that led to the particular point being expressed or the way it is expressed. There may have been contentious issues discussed at the EWG, at the SC meeting, in country consultations or at the Commission meeting. It is helpful for users of the standard to be aware of the difficulties that have arisen, been debated and hopefully solved. These are often the very points that new users of the standard have concerns about and where they need guidance. This section could also list points which have shown to be of particular concern when starting to apply the standard (e.g. treatment schedules) or found to require systematic consideration when applying a standard (e.g. consideration of environmental consequences under economic consequences in the earlier versions of the PRA standards).

References to additional explanatory material

The references noted here are not those referred to in the standard. If available, they should provide additional background to the standard. This may be material on the way some countries and their agencies apply the standard or other discussion documents on the standard (generally information that will be useful in understanding the use of the standard).

ANNEX 6: Statement of commitment**STATEMENT OF COMMITMENT – STANDARD SETTING**

[Report of CPM-2 (2007), Appendix 11, updated by IPPC Secretariat 2012-11 with guidance from CPM-7 (2012); updated by the IPPC Secretariat 2015-09¹]

Each nominee is requested to read the information listed and referenced in Appendix 1 for the relevant body, complete and sign this statement of commitment and submit it at the same time as the nomination and CV.

1. IPPC body (Standards Committee, Technical Panel, Expert Working Group etc.):

Expected meeting date and location, if relevant:

2. Nominee:

I have read the information listed and referenced in Appendix 1 in regards to my nomination and, if selected, agree to undertake the tasks and responsibilities involved and to commit the time required. I have also discussed with my employer the time commitment and financial resources² required (as appropriate) to carry out my duties if my nomination is approved for the body indicated under section 1 above.

I also agree that, if I request financial assistance to attend the relevant IPPC meeting and I am eligible to receive it, I have read and will adhere to the conditions laid out in Commitment of Funded Participants section of the *Criteria used for prioritizing participants to receive travel assistance to attend meetings organized by the IPPC Secretariat* (web link provided in footnote 1).

Signature

Date

¹ 2015-09, in order to accommodate the situation where two different agencies contribute to the funding of an expert (one for salary and the other for travel), the IPPC Secretariat clarified that “financial resources” were intended for travel.

² As recommended by the second session of the Interim Commission on Phytosanitary Measures (1999), whenever possible, those participating in IPPC activities voluntarily fund their travel and subsistence to attend meetings. Participants may request financial assistance, with the understanding that resources are limited and the priority for financial assistance is given to developing country participants. Requests for financial assistance will be assessed by the *Criteria used for prioritizing participants to receive travel assistance to attend meetings organized by the IPPC Secretariat* that is in place at the time this statement of commitment (<https://www.ippc.int/publications/criteria-used-prioritizing-participants-receive-travel-assistance-attend-meetings>). The statistical information in place at the time of signing this statement of commitment will be applied for the duration of the term of membership in the relevant IPPC body.

3. Authorization (time):

I have read the information listed and referenced in Appendix 1 in regards to the above nominee who is employed in our organization. If this nominee is selected, I agree to ensure that the appropriate time will be allocated to allow the nominee to undertake the tasks and responsibilities involved and commit the time required. I have the authority from my organization to authorize this and understand the time commitment required to carry out these duties.

Name, Title (please print)

Address

Phone

Email

Signature

Date

4. Authorization (financial resources):

I have read the information listed and referenced in Appendix 1 in regards to the above nominee who is employed in our organization. If this nominee is selected, I agree to ensure that the appropriate financial resources to travel will be allocated to allow the nominee to undertake the tasks and responsibilities involved. I have the authority from my organization to authorize this and understand the financial resources required (as appropriate, see footnote 1) to carry out these duties.

Contact information same as per point 3 (if this is the case, still add signature and date below).

Name, Title (please print)

Address

Phone

Email

Signature

Date

Contact details for nominee:
Name: (LAST NAME in upper case, given names)
E-mail:
Phone:
Fax:
Mailing address:

APPENDIX 1 to the Statement of Commitment

General membership duties relevant to all bodies:

- allocate time, as appropriate, for travel to the meeting, attendance in the meeting and follow-up activities, as necessary
- consult and liaise with relevant national and international experts, as appropriate
- read all meeting documents prior to the meeting and provide discussion papers and/or comments, if necessary
- maintain a functioning e-mail address and participate in e-mail discussions or conference calls occurring outside of the meeting dates and times, if necessary
- participate as an individual expert in a personal capacity
- participate in relevant meetings for the duration of the term and participate in virtual meetings (not to exceed one per month), some of which may take place outside local daytime hours, in order to accommodate the participation from multiple time zones
- if unable to attend the meeting, provide written notification to the IPPC Secretariat well in advance and before travel arrangements have been made
- use web based tools as appropriate (Go To Meetings.com, e-mail, Online Comment System, Skype, e-forums, e-decisions, etc.)
- other specific details may be found in the IPPC Procedural Manual (<https://www.ippc.int/core-activities/governance/ippc-procedure-manual>).

Note: for authors of diagnostic protocols, there is generally no attendance to meetings.

Standards Committee (SC) member duties, in addition to the above general duties:

- attend two to three SC meetings annually at FAO headquarters
- participate in relevant regional workshops for reviewing draft ISPMs
- participate for the entirety of the three-year term, as appropriate
- other duties as assigned.

Further details are provided in the following documents, found in the IPPC Procedural Manual:

- [Terms of Reference](#) and [Rules of Procedure for the SC](#)
- Guidelines on the duties of SC members
- Guidelines on the role and responsibilities of a steward of an ISPM.

Stewards

Assistant Steward will assist the Steward and take over the duties of the Steward if needed. The Assistant steward is not expected to attend the meetings.

If the member agrees to be a steward they:

For an expert drafting group:

- agree to represent the SC throughout the Standard setting process of the draft ISPM, including reviewing comments and revising draft standards in track changes at various stages in the Standard setting process as described in the IPPC procedural manual. In some cases, this will involve reviewing a large number of comments and providing responses to these comments in a very short, pre-determined time period.
- agree to prepare relevant SC documents and attend SC meetings (possibly virtually) where the draft standard will be discussed

For a technical panel:

- agree to provide advice and guidance to the panel members and IPPC Secretariat on various issues related to the relevant panel, take decisions on behalf of the panel, represent the panel at all SC meetings and attend all annual technical panel meetings

Technical panel member duties, in addition to the above general duties:

- attend at least one annual meeting and multiple virtual meetings (not to exceed one per month)
- participate in the technical panel for the full duration of the five year term
- other duties as assigned
- Technical panel on diagnostic protocols (TPDP) members agree to ensure that the development of individual diagnostic protocols (DPs) assigned to them is progressing, communicate and exchange with lead authors and editorial teams as necessary, and intervene, as appropriate, to ensure DPs are developed and reviewed as agreed in the TPDP work plan. Provide updates to the IPPC Secretariat on each DP as requested.
- Technical panel on phytosanitary treatments (TPPT) members agree to ensure work is progressing in the development of the phytosanitary treatments (PTs) assigned to them and intervene, as appropriate, to ensure PTs are developed and reviewed as agreed in the TPPT work plan. As TPPT lead for each PT, provide written updates to the IPPC Secretariat on each PT prior to each virtual meeting (monthly to quarterly).

Further details are provided in the IPPC Procedural Manual and on the IPP (www.ippc.int):

- [Terms of Reference and Rules of Procedure for TPs](#)
- Guidelines for the composition and organization of expert working groups
- Guidelines for the operation of expert working groups.
- Specifications

Expert working group member duties, in addition to the above general duties:

- attend at least one meeting and, if required, multiple virtual meetings (not to exceed one per month)
- other duties as assigned.

Further details are provided in the IPPC Procedural Manual:

- Guidelines for the composition and organization of expert working groups
- Guidelines for the operation of expert working groups.

Diagnostic protocols lead authors and editorial team members duties, in addition to the above general duties:

- Lead authors and members of an editorial team agree to fully participate in the development of each DP and to respond to comments and revise the DP as appropriate until adoption.
- Lead authors agree to conduct regular consultations with the editorial team members via phone, e-mail or virtual tools, to ensure liaison with the discipline lead, and to inform the discipline lead of any change impacting the development of their protocols.

Further details are provided in ISPM 27 (*Diagnostic protocols for regulated pests*) and the [Instructions to authors of diagnostic protocols](#).

ANNEX 7: IPPC Secretariat Document Processing Calendar

(As of September 2016)

All dates are approximate except for those marked with:

¹: dates related to the Standard setting procedure as adopted by the CPM-11 (2016)

²: deadlines decided by the CPM Bureau June 2011.

FIRST CONSULTATION ON DRAFT ISPMs	NOTES
First consultation begins (90 days ¹)	Always 1 July
First consultation ends	Always 30 September
Steward presentations for draft ISPMs under first consultation due	Always 15 June
Secretariat posts draft ISPMs in the public area of the IPP	Should be posted as soon as received from translation, no later than 1 July
Secretariat forwards compiled comments on draft ISPM to Steward or TP	3 days after first consultation ends
Secretariat makes compiled comments on draft ISPM publicly available	3 days after first consultation ends
Steward sends responses to comments and revised draft ISPM to the Secretariat	By 1 February
Secretariat posts draft ISPM and responses to comments for SC-7 in the restricted work area	By 1 March
Regional Workshops to review draft ISPM	Always July through October
SECOND CONSULTATION	NOTES
Second consultation begins (90 days ¹)	Always 1 July
Second consultation ends	Always 30 September
Secretariat forwards compiled comments on draft ISPM to Steward or TP	3 days after second consultation ends
Secretariat makes compiled comments on draft ISPM publicly available	3 days after second consultation ends
Steward sends responses to comments and revised draft ISPM to the Secretariat	15 October (2 weeks after second consultation ends)
Secretariat posts draft ISPM for SC November	2 weeks before SC November
CPM	NOTES
Secretariat posts draft ISPMs on IPP in all FAO languages on IPP (for the CPM session)	Minimum 6 weeks before CPM ¹ (normally by 15 January)

Secretariat posts CPM papers on IPP in all FAO languages on IPP (for the CPM session)	Minimum 4 weeks before CPM ²
Contracting parties submit objections to Secretariat on the draft ISPMs	3 weeks before CPM ¹
Secretariat compiles objections, creates CPM paper, and posts it on IPP (for CPM session)	As soon as possible
Secretariat publishes adopted ISPM on the public area of the IPP (Adopted standards page)	8 weeks after CPM ²
CONSULTATION ON DRAFT SPECIFICATIONS	NOTES
Consultation for draft specification (60 days ¹)	Starts 1 July.
Secretariat sends compiled comments on draft specification to steward	3 days after consultation ends
Secretariat posts compiled comments on draft specification on public area of IPP	3 days after consultation ends
Steward reviews compiled comments, adjusts draft specification, and returns responses to comments to Secretariat	8 weeks before SC meeting
Secretariat posts draft specification with steward responses to comments on IPP in the SC restricted work area	2 weeks before SC meeting
Secretariat posts approved specification on IPP public area	2 weeks after last day of SC May (for En version, languages will follow as they are ready from translation)
SC MAY	NOTES
Drafting groups submit draft ISPMs to Secretariat	By 15 December
Secretariat posts draft ISPM in the IPP (available for NPPOs, RPPOs and international organizations)	By 1 March ²
Submission of working papers for the SC May due	5 weeks before SC May
Secretariat posts working papers for the SC May on IPP in restricted work areas for SC	2 weeks before SC May ²
SC NOVEMBER	NOTES
Submission of working papers for the SC November due	5 weeks before SC November
Secretariat posts working papers for the SC November on IPP in restricted work areas for SC	2 weeks before SC November ²
Secretariat posts approved Specification on IPP public area	2 weeks after last day of SC November
SC-7 MAY	NOTES
Secretariat posts draft ISPM on IPP in restricted work areas for SC	By 1 March ²

Secretariat posts working papers on IPP in restricted work area for SC

2 weeks before SC-7 May²

GENERAL DEADLINES FOR ALL MEETINGS**NOTES**

Invitations sent

12 weeks before meeting

Meeting documents submitted

5 weeks before meeting

Meeting documents posted

2 weeks before meeting²

Meeting reports posted

8 weeks after meeting

ANNEX 8: Rules of Procedure of the Commission on Phytosanitary Measures¹⁶⁸**Rule I: Membership**

Membership of the Commission on Phytosanitary Measures (hereafter referred to as “the Commission”) consists of all contracting parties to the International Plant Protection Convention (hereafter referred to as “the IPPC”).

Before the opening of each session of the Commission, each contracting party (hereafter referred to as “member of the Commission”) shall communicate to the Director-General (hereafter referred to as “the Director-General”) of the Food and Agriculture Organization of the United Nations (hereafter referred to as “the Organization”) the names of all the persons (the head of the delegation, as well as alternates, experts and advisers) appointed by such member of the Commission to represent it during the session mentioned above. For the purpose of these Rules, the term “delegates” means the persons so appointed.

Rule II: Officers

The Commission shall elect a Chairperson, a Vice-Chairperson and other persons from among the delegates to form a Commission Bureau of seven persons, so that each FAO region is represented. The Commission shall elect a rapporteur for each regular session from among the delegates. No delegate shall be eligible without the concurrence of the respective head of delegation. The Commission Bureau shall be elected under the FAO Rules and Regulations at the end of a regular session and shall hold office for a term of two years. Subject to the agreement of the region concerned, an individual member shall be eligible for re-election for another two consecutive terms. In exceptional circumstances, an FAO region may submit a request to the CPM for an exception to allow a member to serve an additional term(s). The Chairperson, or in the absence of the Chairperson, a Vice-Chairperson, shall preside at all meetings of the Commission and shall exercise such other functions as may be required to facilitate the work of the Commission. A Vice-Chairperson acting as a Chairperson shall have the same powers and duties as the Chairperson. The purpose of the Commission Bureau is to provide guidance to the Commission on the strategic direction, financial and operational management of its activities in cooperation with others as approved by the Commission. *Detailed Rules of Procedure for the Bureau are attached in Annex I which shall constitute an integral part of these Rules of Procedure.*

The Chairperson shall declare the opening and closing of each plenary meeting of the session. He/she shall direct the discussions in plenary meetings, and at such meetings ensure observance of these Rules, accord the right to speak, put questions and announce decisions. He/she shall rule on points of order and, subject to these Rules, shall have complete control over the proceedings at any meetings. He/she may, in the course of the discussion of an item, propose to the Commission the limitation of the time to be allowed to speakers, the number of times each delegation may speak on any question, the closure of the list of speakers, the suspension or adjournment of the meeting, or the adjournment or closure of the debate on the item under discussion.

The Chairperson, or a Vice-Chairperson acting as Chairperson, shall not vote but may appoint an alternate, associate or adviser from his/her delegation to vote in his/her place (see Annex I for the RoP of the CPM Bureau and Annex II for the Guidelines for Rotation of the CPM Chairperson and Vice-Chairperson and Nomination of Bureau).

The Chairperson, in the exercise of his/her functions, remains under the authority of the Commission.

¹⁶⁸ The ICPM-1(1998) provisionally adopted the Rules of Procedures (RoPs) of the Commission, ICPM-2 (1999) revised and adopted the RoPs; CPM-7 (2012) adopted the revised Standard setting procedure; CPM-8 (2013) revised and adopted the CPM RoPs *for the CPM Bureau and rule VII for observers.*

Rule III: Secretary

The Secretary of the IPPC shall be responsible for implementing the activities assigned to the Secretariat in accordance with the policies of the Commission. The Secretary shall report to the Commission on the activities assigned to the Secretariat.

Rule IV: Sessions

The Commission shall hold one regular session each year. Special sessions shall be held as considered necessary by the Commission or at the written request of at least one third of the members of the Commission.

Sessions of the Commission shall be convened by the Chairperson of the Commission, after consultation with the Director-General.

Notice of the date and place of each session of the Commission shall be communicated to all the members of the Commission at least two months before the session.

Each member of the Commission shall have one representative, head of delegation, who may be accompanied by one or more alternates, experts and advisers. An alternate, expert or adviser shall not have the right to vote except when substituting for the head of delegation.

Meetings of the Commission shall be held in public unless the Commission decides otherwise.

A majority of the members of the Commission shall constitute a quorum.

Rule V: Agenda and documents

The Director-General, in consultation with the Chairperson of the Commission, shall prepare a provisional agenda.

The first item on the provisional agenda shall be the adoption of the Agenda.

Any member of the Commission may request the Director-General to include specific items in the Provisional Agenda.

The Provisional Agenda shall normally be circulated by the Director-General at least two months in advance of the session to all members of the Commission and to all observers invited to attend the session.

Any member of the Commission, and the Director-General, may, after the despatch of the Provisional Agenda, propose the inclusion of specific items on the Agenda with respect to matters of an urgent nature. These items should be placed on a supplementary list, which, if time permits before the opening of the session, shall be dispatched by the Director-General to all members of the Commission, failing which the supplementary list shall be communicated to the Chairperson for submission to the Commission.

After the Agenda has been adopted, the Commission may, by a two-thirds majority of the members of the Commission present and voting, amend the Agenda by the deletion, addition or modification of any item. No matter referred to the Commission by the Conference or Council of the Organization may be omitted from the Agenda.

Documents to be submitted to the Commission at any Session shall be furnished by the Director-General to all the members of the Commission and to observers invited to the session, at the time the Agenda is dispatched or as soon as possible thereafter.

Formal proposals relating to items on the Agenda and amendments thereto introduced during a session of the Commission shall be made in writing and handed to the Chairperson, who shall arrange for copies to be circulated to all delegates.

Rule VI: Voting procedures

Subject to the provisions of Article II of the Constitution of the Organization, each member of the Commission shall have one vote.

The Commission shall make every effort to reach agreement on all matters by consensus. If all efforts to reach consensus have been exhausted and no agreement has been reached, the decision shall, as the last resort be taken by a two-thirds majority of the members of the Commission present and voting.

For the purpose of these Rules, the phrase “members present and voting” means members of the Commission casting an affirmative or negative vote. Members who abstain from voting or cast a defective ballot are considered as not voting.

Upon the request of any member of the Commission, voting shall be by roll-call vote, in which case the vote of each member shall be recorded.

When the Commission so decides, voting shall be by secret ballot.

The provisions of Rule XII of the General Rules of the Organization shall apply *mutatis mutandis* to all matters not specifically dealt with under this Rule.

Rule VII: Observers

Regional plant protection organizations (RPPOs) recognized by the Commission under article IX of the IPPC shall participate only as observers in all meetings of the Commission.

Countries can participate as observers in meetings of the Commission as follows:

- Any Country that is not a contracting party but is a Member of FAO, as well as the United Nations, any of its specialized agencies and the International Atomic Energy Agency, may upon request communicated to the IPPC Secretary and endorsement by the CPM Bureau, participate as an observer in meetings of the Commission.
- Any Country that is not a Member of FAO or an IPPC contracting party, but is a Member of the United Nations, any of its specialized agencies or the International Atomic Energy Agency may, upon request communicated to the FAO Director General, and subject to the relevant provisions of the Basic Texts of the Organization, be invited to participate as an observer in meetings of the Commission.
- Any Country that is not a Member of FAO or a member of the United Nations, any of its specialized agencies or the International Atomic Energy Agency shall not be permitted to send observers to meetings of the Commission.

International organizations, whether intergovernmental or non-governmental, may, subject to the relevant provisions of the Basic Texts of the Organization participate as observers in meetings of the Commission. Relations with the concerned organization shall be dealt with by the Director-General, FAO, taking into account guidance given by the Commission.

- i. Intergovernmental organizations (IGOs):
 - IGOs should meet the following criteria: it should have been set up by an intergovernmental convention (a convention to which the parties are States); the governing body of the organization should be composed of members designated by governments; the income of the organization should be made up mainly, if not exclusively, of contributions from governments.
 - IGOs that have established formal relations with FAO may, upon request communicated to the IPPC Secretary and endorsement by the Bureau, participate as observers in meetings of the Commission.
 - IGOs that have not established formal relations with FAO may, upon request communicated to the IPPC Secretary, participate as observers in meetings of the Commission if, in the judgment

of the IPPC Secretary and the CPM Bureau, there are concrete reasons for allowing their participation which would forward the work of the Commission.

- ii. International non-governmental organizations (INGOs):
- INGOs that have been granted formal status by FAO may participate in meetings of the Commission.
 - INGOs that have not been granted formal status by FAO may, upon request communicated to the IPPC Secretary, participate as observers in meetings of the Commission if, in the judgment of the IPPC Secretary and the CPM Bureau, there are concrete reasons for allowing their participation which would forward the work of the Commission.
 - INGOs that have not been granted formal status by FAO shall be examined in light of the following criteria: they should be international in structure and scope of activity, and representative of the specialized field of interest in which they operate; they should be concerned with matters covering a part or all of the Commission's field of activity; they should have aims and purposes in conformity with the IPPC; they should have a permanent directing body and Secretariat, authorized representatives and systematic procedures and machinery for communicating with its membership in various countries; and they should have been established at least three years before they request participating in the meetings of the Commission.

Observers to CPM meetings may: i) participate in the discussions, subject to the approval of the Chairperson of the Commission and without the right to vote; ii) receive the documents other than those of a restricted nature, and iii) circulate, without abridgement, the views of the organization or country which they represent on particular items of the agenda.

CPM Bureau meetings are not open to observers.

Each CPM Subsidiary Body shall establish its own rules on observers which shall conform to these Rules and the relevant provisions of the FAO Basic Texts.

Rule VIII: Records and reports

At each session, the Commission shall approve a report embodying its views, recommendations and conclusions, including, when requested, a statement of minority views. Such other records, for its own use, as the Commission may on occasion decide, shall also be maintained.

The report of the Commission shall be transmitted at the close of each session to the Director-General who shall circulate it to all members of the Commission and observers that were represented at the session, for their information, and, upon request, to other Members and Associate Members of the Organization.

Recommendations of the Commission having policy, programme or financial implications for the Organization shall be brought by the Director-General to the attention of the Conference and/or of the Council of the Organization for appropriate action.

Subject to the provisions of the preceding paragraph the Director-General may request members of the Commission to supply the Commission with information on action taken on the basis of recommendations made by the Commission.

Rule IX: Subsidiary bodies

The Commission may establish such subsidiary bodies as it deems necessary for the accomplishment of its functions.

The terms of reference and procedures of the subsidiary bodies shall be determined by the Commission.

Membership in these subsidiary bodies shall consist of selected members of the Commission, or of individuals appointed in their personal capacity as respectively determined by the Commission.

The representatives of subsidiary bodies shall be specialists in the fields of activity of the respective subsidiary bodies.

The establishment of subsidiary bodies shall be subject to the availability of the necessary funds in the relevant chapter of the approved budget of the Organization. Before taking any decision involving expenditure in connection with the establishment of subsidiary bodies, the Commission shall have before it a report from the Director-General on the administrative and financial implications thereof.

Each subsidiary body shall elect its own officers, unless appointed by the Commission.

Rule X: Development and adoption of International Standards

The procedures for the development and adoption of international standards are set out in the Annex III to these Rules and shall form an integral part thereof.

Notwithstanding the provisions of Rule VI.2, where consensus is not reached on a proposal for the adoption of a standard which has been introduced before the Commission for the first time, the proposed standard shall be referred back to the appropriate body of the Commission, together with its comments thereon, for further consideration.

Rule XI: Expenses

Expenses incurred by delegates when attending sessions of the Commission or of its subsidiary bodies, as well as the expenses incurred by observers at sessions, shall be borne by their respective governments or organizations. Developing countries delegates may request financial assistance to attend sessions of the Commission or its subsidiary bodies.

Any financial operations of the Commission and its subsidiary bodies shall be governed by the appropriate provisions of the Financial Regulations of the Organization.

Rule XII: Languages

Pursuant to Rule XLVII of the General Rules of the Organization, the languages of the Commission and its subsidiary bodies shall be the languages of the Organization.

Any representative using a language other than one of the languages of the Commission shall provide for interpretation into one of the languages of the Commission.

Rule XIII: Amendment and suspension of the rules

Amendment of or additions to these Rules may be adopted by a two-thirds majority of the members of the Commission present and voting, provided that not less than 24 hours notice of the proposal for the amendment or the addition has been given.

Any of the above Rules of the Commission, other than Rule I.1, Rule IV.2 and 6, Rule V.6, Rule VI.1 and 2, Rule VII, Rule VIII.3 and 4, Rule IX.2 and 5, Rule XI, Rule XIII.1 and Rule XIV may be suspended by a two thirds majority of the members of the Commission present and voting, provided that not less than 24 hours notice of the proposal for suspension has been given. Such notice may be waived if no representative of the members of the Commission objects.

Rule XIV: Entry into force

These Rules and any amendments or additions thereto shall come into force upon approval by the Director-General of the Organization.

ANNEX I**RULES OF PROCEDURE FOR THE BUREAU OF THE
COMMISSION ON PHYTOSANITARY MEASURES¹⁶⁹****Rule 1. Purpose of the Bureau**

The purpose of the Bureau is to provide guidance to the CPM on the strategic direction, financial and operational management of its activities in cooperation with others as approved by CPM.

As appropriate, members of the Bureau will also assist the CPM in its administrative and operational duties. The Bureau provides continuity in the management of the CPM and, through representation of all FAO regions, facilitates the expression of all viewpoints on strategic, administrative and procedural matters on an ongoing basis.

Rule 2. Functions of the Bureau

- (1) The Bureau shall have the following functions:
- (2) Ensuring the efficient implementation of the CPM work programme in coordination with the Secretariat.
- (3) Making recommendations to improve CPM management and delivery of strategic directions, financial and operational activities.
- (4) Assisting with the administrative, and operational duties of the CPM in areas such as:
- (5) delivery of the IPPC Strategic Framework
- (6) financial planning and management
- (7) Providing advice, guidance and strategic direction to subsidiary and other bodies in between plenary sessions of the CPM, in accordance with CPM decisions.
- (8) Addressing specific issues assigned to it by the CPM.

Rule 3. Membership

The members of the Bureau shall be elected by the CPM as per Rule II of the Rules of Procedure of the CPM.

FAO regions select their candidates for membership of the Bureau on the basis of the procedures agreed within each region.

Rule 4. Replacement of members

FAO regions shall nominate replacements for members of the Bureau and submit them to the CPM for election. Replacements should be eligible to be members as set forth in these Rules. Each FAO region shall select a maximum of two replacements for CPM election. If a member of the Bureau, other than the Chairperson, becomes unavailable for a meeting their respective replacement may substitute them during that specific meeting. If a member of the Bureau becomes unavailable on a long term basis, for unavoidable reasons, resigns or no longer meets the qualifications required for being member of the Bureau, the replacement will substitute the member of the Bureau for the remainder of the term of office for which he/she has been elected. The replacement should be from the same region as the member of the Bureau being replaced.

¹⁶⁹ CPM-8 (2013) and adopted the Annex I of the CPM RoPs.

Rule 5. Chairperson

The Chairperson of the CPM shall be the Chairperson of the Bureau.

Rule 6. Meetings

Bureau meetings shall be convened by the IPPC Secretary. Four members of the Bureau shall constitute a quorum. The Bureau shall meet at least twice a year. The IPPC Secretary may also convene meetings of the Bureau as necessary to enable any outstanding specific activities to be undertaken before the following CPM session or scheduled Bureau meeting.

In the absence of the Chairperson, the Vice Chairperson will chair the meeting.

Meetings of the Bureau shall be closed unless otherwise determined by the Bureau. The Bureau may invite experts to provide advice or information on specific matters. The IPPC Secretary or a representative designated by him/her shall attend the meetings of the Bureau.

Rule 7. Decision making

Decisions will be made by consensus. Situations where consensus cannot be reached shall be described in the meeting reports detailing all positions maintained and presented to the CPM for guidance and appropriate action.

Rule 8. Documentation, records and reports

The Secretariat is responsible for coordinating the activities of the Bureau and providing administrative, technical and editorial support, as required by the Bureau.

The Secretary, in consultation with the Chairperson of the CPM, shall prepare a provisional agenda for the Bureau meetings and make it available to members of the Bureau preferably four weeks prior to the beginning of each meeting.

The Secretariat shall make meeting documents available to Bureau members as soon as possible after the preparation of the provisional agenda.

The Secretariat shall keep the records of the Bureau and minutes of the Bureau meetings. A report should be available within one month after each meeting and posted on the International Phytosanitary Portal.

The Chairperson shall submit a yearly report to the CPM on the activities of the Bureau.

Rule 9. Language

The business of the Bureau shall be conducted in English, unless otherwise decided by the Bureau.

Rule 10. Amendment

These Rules and amendments or additions thereto shall be adopted by two thirds majority of the members of the Commission present and voting, provided that not less than 24 hours notice of the proposal for the amendment or addition has been given.

ANNEX II**GUIDELINES FOR ROTATION OF THE CPM CHAIRPERSON AND VICE-CHAIRPERSON AND NOMINATION OF BUREAU**¹⁷⁰**Rotation of the CPM Chairperson and Vice-Chairperson**

Chairperson of the Commission on Phytosanitary Measures will be rotated among the seven (7) FAO regions in the following sequence: Asia, Southwest Pacific, Latin America and the Caribbean, Africa, North America, Near East and Europe, followed by a grouping that would include only the four (4) largest regions (those regions with the largest number of countries): Asia, Latin America and the Caribbean, Europe, Africa, and then followed by the first seven listed above, and so forth. The rotation scheme would thus be: 7-4-7-4.

Following the rotation scheme identified above, the region which is next in line for occupying the position of the Chairperson will propose a candidate for the Vice-Chairperson. In the following term the region occupying the position of the Vice-Chairperson will propose a candidate for the position of the Chairperson.

Selection and Nomination of Bureau members

When selecting candidates, regions should take due account of the need for competences relevant to participation in the Bureau. Candidates should be selected on the basis of individual qualifications and experience relevant to the mandate of the CPM and where appropriate on the basis of their potential to take on the chairing of the CPM.

In putting forward candidates for the Bureau, regions should consider the individual's experience and expertise on technical and operational IPPC issues and their capacity to contribute to CPM and Bureau activities and functions. In particular, consideration should be given to the individual's:

- Knowledge of the IPPC purpose, objectives, strategies, functions, roles and operational and internal processes.
- Understanding of IPPC related international organizations, for example: WTO-SPS and its related standard setting bodies, CBD, etc.
- Experience in financial management.
- Knowledge of national phytosanitary systems, regulations and practices.
- Experience in guiding or directing the operations of an organization or governance body to accomplish its mission, goals and objectives.
- Communication and collaboration skills including the ability to clarify, summarize and seek consensus.
- Experience in chairing and facilitating large fora, including supporting decision-making, negotiation and enabling compromise in such fora.
- Ability to act in an impartial and objective way.
- Ability to be flexible and resilient.

The following considerations would be desirable:

- The role of Chairperson is a substantial one and a candidate should be prepared to devote a significant amount of time and energy to fulfill the responsibilities attached to this role. The employer should provide the time and where appropriate, the necessary resources to enable the Chairperson to fulfill the responsibilities attached to this role. Vice-Chairpersons should have the same competence and expertise, as the Chairperson, but may have less experience.
- The candidates for Bureau membership (including Chairperson and Vice-Chairpersons) should be employed by an NPPO.

¹⁷⁰ These guidelines were adopted by CPM-8 (2013) as Attachment II, but for logic sequencing the IPPC Secretariat renumbered them Annex II.

- Candidates for Chairperson should have served for at least one term (two years) in the Bureau.
- It may be desirable that the Chairperson has served previously as a Vice-Chairperson.

These guidelines are not intended to set precedents for other FAO or Article XIV bodies and are neither intended to establish nor recognise the FAO regions mentioned therein and their rotational weightings.

ANNEX III

IPPC STANDARDS SETTING PROCEDURE

The text of Annex III is reported under 2.1 of this document and hence deleted here to reduce the number of pages.

ANNEX 9: The International Plant Protection Convention

PREAMBLE

The contracting parties,

- *recognizing* the necessity for international cooperation in controlling pests of plants and plant products and in preventing their international spread, and especially their introduction into endangered areas;
- *recognizing* that phytosanitary measures should be technically justified, transparent and should not be applied in such a way as to constitute either a means of arbitrary or unjustified discrimination or a disguised restriction, particularly on international trade;
- *desiring* to ensure close coordination of measures directed to these ends;
- *desiring* to provide a framework for the development and application of harmonized phytosanitary measures and the elaboration of international standards to that effect;
- *taking into account* internationally approved principles governing the protection of plant, human and animal health, and the environment; and
- *noting* the agreements concluded as a result of the Uruguay Round of Multilateral Trade Negotiations, including the Agreement on the Application of Sanitary and Phytosanitary Measures;

have agreed as follows:

ARTICLE I

Purpose and responsibility

1. With the purpose of securing common and effective action to prevent the spread and introduction of pests of plants and plant products, and to promote appropriate measures for their control, the contracting parties undertake to adopt the legislative, technical and administrative measures specified in this Convention and in supplementary agreements pursuant to Article XVI.
2. Each contracting party shall assume responsibility, without prejudice to obligations assumed under other international agreements, for the fulfilment within its territories of all requirements under this Convention.
3. The division of responsibilities for the fulfilment of the requirements of this Convention between member organizations of FAO and their member states that are contracting parties shall be in accordance with their respective competencies.
4. Where appropriate, the provisions of this Convention may be deemed by contracting parties to extend, in addition to plants and plant products, to storage places, packaging, conveyances, containers, soil and any other organism, object or material capable of harbouring or spreading plant pests, particularly where international transportation is involved.

ARTICLE II

Use of terms

1. For the purpose of this Convention, the following terms shall have the meanings hereunder assigned to them:

“Area of low pest prevalence” - an area, whether all of a country, part of a country, or all or parts of several countries, as identified by the competent authorities, in which a specific pest occurs at low levels and which is subject to effective surveillance, control or eradication measures;

“Commission” - the Commission on Phytosanitary Measures established under Article XI;

“Endangered area” - an area where ecological factors favour the establishment of a pest whose presence in the area will result in economically important loss;

“Establishment” - perpetuation, for the foreseeable future, of a pest within an area after entry;

“Harmonized phytosanitary measures” - phytosanitary measures established by contracting parties based on international standards;

“International standards” - international standards established in accordance with Article X, paragraphs 1 and 2;

“Introduction” - the entry of a pest resulting in its establishment;

“Pest” - any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products;

“Pest risk analysis” - the process of evaluating biological or other scientific and economic evidence to determine whether a pest should be regulated and the strength of any phytosanitary measures to be taken against it;

“Phytosanitary measure” - any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of pests;

“Plant products” - unmanufactured material of plant origin (including grain) and those manufactured products that, by their nature or that of their processing, may create a risk for the introduction and spread of pests;

“Plants” - living plants and parts thereof, including seeds and germplasm;

“Quarantine pest” - a pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled;

“Regional standards” - standards established by a regional plant protection organization for the guidance of the members of that organization;

“Regulated article” - any plant, plant product, storage place, packaging, conveyance, container, soil and any other organism, object or material capable of harbouring or spreading pests, deemed to require phytosanitary measures, particularly where international transportation is involved;

“Regulated non-quarantine pest” - a non-quarantine pest whose presence in plants for planting affects the intended use of those plants with an economically unacceptable impact and which is therefore regulated within the territory of the importing contracting party;

“Regulated pest” - a quarantine pest or a regulated non-quarantine pest;

“Secretary” - Secretary of the Commission appointed pursuant to Article XII;

“Technically justified” - justified on the basis of conclusions reached by using an appropriate pest risk analysis or, where applicable, another comparable examination and evaluation of available scientific information.

2. The definitions set forth in this Article, being limited to the application of this Convention, shall not be deemed to affect definitions established under domestic laws or regulations of contracting parties.

ARTICLE III

Relationship with other international agreements

Nothing in this Convention shall affect the rights and obligations of the contracting parties under relevant international agreements.

ARTICLE IV

General provisions relating to the organizational arrangements for national plant protection

1. Each contracting party shall make provision, to the best of its ability, for an official national plant protection organization with the main responsibilities set out in this Article.

2. The responsibilities of an official national plant protection organization shall include the following:
- (a) the issuance of certificates relating to the phytosanitary regulations of the importing contracting party for consignments of plants, plant products and other regulated articles;
 - (b) the surveillance of growing plants, including both areas under cultivation (*inter alia* fields, plantations, nurseries, gardens, greenhouses and laboratories) and wild flora, and of plants and plant products in storage or in transportation, particularly with the object of reporting the occurrence, outbreak and spread of pests, and of controlling those pests, including the reporting referred to under Article VIII paragraph 1(a);
 - (c) the inspection of consignments of plants and plant products moving in international traffic and, where appropriate, the inspection of other regulated articles, particularly with the object of preventing the introduction and/or spread of pests;
 - (d) the disinfestation or disinfection of consignments of plants, plant products and other regulated articles moving in international traffic, to meet phytosanitary requirements;
 - (e) the protection of endangered areas and the designation, maintenance and surveillance of pest free areas and areas of low pest prevalence;
 - (f) the conduct of pest risk analyses;
 - (g) to ensure through appropriate procedures that the phytosanitary security of consignments after certification regarding composition, substitution and reinfestation is maintained prior to export; and
 - (h) training and development of staff.
3. Each contracting party shall make provision, to the best of its ability, for the following:
- (a) the distribution of information within the territory of the contracting party regarding regulated pests and the means of their prevention and control;
 - (b) research and investigation in the field of plant protection;
 - (c) the issuance of phytosanitary regulations; and
 - (d) the performance of such other functions as may be required for the implementation of this Convention.
4. Each contracting party shall submit a description of its official national plant protection organization and of changes in such organization to the Secretary. A contracting party shall provide a description of its organizational arrangements for plant protection to another contracting party, upon request.

ARTICLE V

Phytosanitary certification

1. Each contracting party shall make arrangements for phytosanitary certification, with the objective of ensuring that exported plants, plant products and other regulated articles and consignments thereof are in conformity with the certifying statement to be made pursuant to paragraph 2(b) of this Article.
2. Each contracting party shall make arrangements for the issuance of phytosanitary certificates in conformity with the following provisions:
- (a) Inspection and other related activities leading to issuance of phytosanitary certificates shall be carried out only by or under the authority of the official national plant protection organization. The issuance of phytosanitary certificates shall be carried out by public officers who are technically qualified and duly authorized by the official national plant protection organization to act on its behalf and under its control with such knowledge and information available to those officers that the authorities of importing

contracting parties may accept the phytosanitary certificates with confidence as dependable documents.

- (b) Phytosanitary certificates, or their electronic equivalent where accepted by the importing contracting party concerned, shall be as worded in the models set out in the Annex to this Convention. These certificates should be completed and issued taking into account relevant international standards.
- (c) Uncertified alterations or erasures shall invalidate the certificates.

3. Each contracting party undertakes not to require consignments of plants or plant products or other regulated articles imported into its territories to be accompanied by phytosanitary certificates inconsistent with the models set out in the Annex to this Convention. Any requirements for additional declarations shall be limited to those technically justified.

ARTICLE VI

Regulated pests

1. Contracting parties may require phytosanitary measures for quarantine pests and regulated non-quarantine pests, provided that such measures are:

- (a) no more stringent than measures applied to the same pests, if present within the territory of the importing contracting party; and
- (b) limited to what is necessary to protect plant health and/or safeguard the intended use and can be technically justified by the contracting party concerned.

2. Contracting parties shall not require phytosanitary measures for non-regulated pests.

ARTICLE VII

Requirements in relation to imports

1. With the aim of preventing the introduction and/or spread of regulated pests into their territories, contracting parties shall have sovereign authority to regulate, in accordance with applicable international agreements, the entry of plants and plant products and other regulated articles and, to this end, may:

- (a) prescribe and adopt phytosanitary measures concerning the importation of plants, plant products and other regulated articles, including, for example, inspection, prohibition on importation, and treatment;
- (b) refuse entry or detain, or require treatment, destruction or removal from the territory of the contracting party, of plants, plant products and other regulated articles or consignments thereof that do not comply with the phytosanitary measures prescribed or adopted under subparagraph (a);
- (c) prohibit or restrict the movement of regulated pests into their territories;
- (d) prohibit or restrict the movement of biological control agents and other organisms of phytosanitary concern claimed to be beneficial into their territories.

2. In order to minimize interference with international trade, each contracting party, in exercising its authority under paragraph 1 of this Article, undertakes to act in conformity with the following:

- (a) Contracting parties shall not, under their phytosanitary legislation, take any of the measures specified in paragraph 1 of this Article unless such measures are made necessary by phytosanitary considerations and are technically justified.
- (b) Contracting parties shall, immediately upon their adoption, publish and transmit phytosanitary requirements, restrictions and prohibitions to any contracting party or parties that they believe may be directly affected by such measures.

- (c) Contracting parties shall, on request, make available to any contracting party the rationale for phytosanitary requirements, restrictions and prohibitions.
- (d) If a contracting party requires consignments of particular plants or plant products to be imported only through specified points of entry, such points shall be so selected as not to unnecessarily impede international trade. The contracting party shall publish a list of such points of entry and communicate it to the Secretary, any regional plant protection organization of which the contracting party is a member, all contracting parties which the contracting party believes to be directly affected, and other contracting parties upon request. Such restrictions on points of entry shall not be made unless the plants, plant products or other regulated articles concerned are required to be accompanied by phytosanitary certificates or to be submitted to inspection or treatment.
- (e) Any inspection or other phytosanitary procedure required by the plant protection organization of a contracting party for a consignment of plants, plant products or other regulated articles offered for importation, shall take place as promptly as possible with due regard to their perishability.
- (f) Importing contracting parties shall, as soon as possible, inform the exporting contracting party concerned or, where appropriate, the re-exporting contracting party concerned, of significant instances of non-compliance with phytosanitary certification. The exporting contracting party or, where appropriate, the re-exporting contracting party concerned, should investigate and, on request, report the result of its investigation to the importing contracting party concerned.
- (g) Contracting parties shall institute only phytosanitary measures that are technically justified, consistent with the pest risk involved and represent the least restrictive measures available, and result in the minimum impediment to the international movement of people, commodities and conveyances.
- (h) Contracting parties shall, as conditions change, and as new facts become available, ensure that phytosanitary measures are promptly modified or removed if found to be unnecessary.
- (i) Contracting parties shall, to the best of their ability, establish and update lists of regulated pests, using scientific names, and make such lists available to the Secretary, to regional plant protection organizations of which they are members and, on request, to other contracting parties.
- (j) Contracting parties shall, to the best of their ability, conduct surveillance for pests and develop and maintain adequate information on pest status in order to support categorization of pests, and for the development of appropriate phytosanitary measures. This information shall be made available to contracting parties, on request.

3. A contracting party may apply measures specified in this Article to pests which may not be capable of establishment in its territories but, if they gained entry, cause economic damage. Measures taken against these pests must be technically justified.

4. Contracting parties may apply measures specified in this Article to consignments in transit through their territories only where such measures are technically justified and necessary to prevent the introduction and/or spread of pests.

5. Nothing in this Article shall prevent importing contracting parties from making special provision, subject to adequate safeguards, for the importation, for the purpose of scientific research, education, or other specific use, of plants and plant products and other regulated articles, and of plant pests.

6. Nothing in this Article shall prevent any contracting party from taking appropriate emergency action on the detection of a pest posing a potential threat to its territories or the report of such a detection. Any such action shall be evaluated as soon as possible to ensure that its continuance is

justified. The action taken shall be immediately reported to contracting parties concerned, the Secretary, and any regional plant protection organization of which the contracting party is a member.

ARTICLE VIII

International cooperation

1. The contracting parties shall cooperate with one another to the fullest practicable extent in achieving the aims of this Convention, and shall in particular:
 - (a) cooperate in the exchange of information on plant pests, particularly the reporting of the occurrence, outbreak or spread of pests that may be of immediate or potential danger, in accordance with such procedures as may be established by the Commission;
 - (b) participate, in so far as is practicable, in any special campaigns for combatting pests that may seriously threaten crop production and need international action to meet the emergencies; and
 - (c) cooperate, to the extent practicable, in providing technical and biological information necessary for pest risk analysis.
2. Each contracting party shall designate a contact point for the exchange of information connected with the implementation of this Convention.

ARTICLE IX

Regional plant protection organizations

1. The contracting parties undertake to cooperate with one another in establishing regional plant protection organizations in appropriate areas.
2. The regional plant protection organizations shall function as the coordinating bodies in the areas covered, shall participate in various activities to achieve the objectives of this Convention and, where appropriate, shall gather and disseminate information.
3. The regional plant protection organizations shall cooperate with the Secretary in achieving the objectives of the Convention and, where appropriate, cooperate with the Secretary and the Commission in developing international standards.
4. The Secretary will convene regular Technical Consultations of representatives of regional plant protection organizations to:
 - (a) promote the development and use of relevant international standards for phytosanitary measures; and
 - (b) encourage inter-regional cooperation in promoting harmonized phytosanitary measures for controlling pests and in preventing their spread and/or introduction.

ARTICLE X

Standards

1. The contracting parties agree to cooperate in the development of international standards in accordance with the procedures adopted by the Commission.
2. International standards shall be adopted by the Commission.
3. Regional standards should be consistent with the principles of this Convention; such standards may be deposited with the Commission for consideration as candidates for international standards for phytosanitary measures if more broadly applicable.
4. Contracting parties should take into account, as appropriate, international standards when undertaking activities related to this Convention.

ARTICLE XI

Commission on Phytosanitary Measures

1. Contracting parties agree to establish the Commission on Phytosanitary Measures within the framework of the Food and Agriculture Organization of the United Nations (FAO).
2. The functions of the Commission shall be to promote the full implementation of the objectives of the Convention and, in particular, to:
 - (a) review the state of plant protection in the world and the need for action to control the international spread of pests and their introduction into endangered areas;
 - (b) establish and keep under review the necessary institutional arrangements and procedures for the development and adoption of international standards, and to adopt international standards;
 - (c) establish rules and procedures for the resolution of disputes in accordance with Article XIII;
 - (d) establish such subsidiary bodies of the Commission as may be necessary for the proper implementation of its functions;
 - (e) adopt guidelines regarding the recognition of regional plant protection organizations;
 - (f) establish cooperation with other relevant international organizations on matters covered by this Convention;
 - (g) adopt such recommendations for the implementation of the Convention as necessary; and
 - (h) perform such other functions as may be necessary to the fulfilment of the objectives of this Convention.
3. Membership in the Commission shall be open to all contracting parties.
4. Each contracting party may be represented at sessions of the Commission by a single delegate who may be accompanied by an alternate, and by experts and advisers. Alternates, experts and advisers may take part in the proceedings of the Commission but may not vote, except in the case of an alternate who is duly authorized to substitute for the delegate.
5. The contracting parties shall make every effort to reach agreement on all matters by consensus. If all efforts to reach consensus have been exhausted and no agreement is reached, the decision shall, as a last resort, be taken by a two-thirds majority of the contracting parties present and voting.
6. A member organization of FAO that is a contracting party and the member states of that member organization that are contracting parties shall exercise their membership rights and fulfil their membership obligations in accordance, *mutatis mutandis*, with the Constitution and General Rules of FAO.
7. The Commission may adopt and amend, as required, its own Rules of Procedure, which shall not be inconsistent with this Convention or with the Constitution of FAO.
8. The Chairperson of the Commission shall convene an annual regular session of the Commission.
9. Special sessions of the Commission shall be convened by the Chairperson of the Commission at the request of at least one-third of its members.
10. The Commission shall elect its Chairperson and no more than two Vice-Chairpersons, each of whom shall serve for a term of two years.

ARTICLE XII

Secretariat

1. The Secretary of the Commission shall be appointed by the Director-General of FAO.
2. The Secretary shall be assisted by such secretariat staff as may be required.
3. The Secretary shall be responsible for implementing the policies and activities of the Commission and carrying out such other functions as may be assigned to the Secretary by this Convention and shall report thereon to the Commission.
4. The Secretary shall disseminate:
 - (a) international standards to all contracting parties within sixty days of adoption;
 - (b) to all contracting parties, lists of points of entry under Article VII paragraph 2(d) communicated by contracting parties;
 - (c) lists of regulated pests whose entry is prohibited or referred to in Article VII paragraph 2(i) to all contracting parties and regional plant protection organizations;
 - (d) information received from contracting parties on phytosanitary requirements, restrictions and prohibitions referred to in Article VII paragraph 2(b), and descriptions of official national plant protection organizations referred to in Article IV paragraph 4.
5. The Secretary shall provide translations in the official languages of FAO of documentation for meetings of the Commission and international standards.
6. The Secretary shall cooperate with regional plant protection organizations in achieving the aims of the Convention.

ARTICLE XIII

Settlement of disputes

1. If there is any dispute regarding the interpretation or application of this Convention, or if a contracting party considers that any action by another contracting party is in conflict with the obligations of the latter under Articles V and VII of this Convention, especially regarding the basis of prohibiting or restricting the imports of plants, plant products or other regulated articles coming from its territories, the contracting parties concerned shall consult among themselves as soon as possible with a view to resolving the dispute.
2. If the dispute cannot be resolved by the means referred to in paragraph 1, the contracting party or parties concerned may request the Director-General of FAO to appoint a committee of experts to consider the question in dispute, in accordance with rules and procedures that may be established by the Commission.
3. This Committee shall include representatives designated by each contracting party concerned. The Committee shall consider the question in dispute, taking into account all documents and other forms of evidence submitted by the contracting parties concerned. The Committee shall prepare a report on the technical aspects of the dispute for the purpose of seeking its resolution. The preparation of the report and its approval shall be according to rules and procedures established by the Commission, and it shall be transmitted by the Director-General to the contracting parties concerned. The report may also be submitted, upon its request, to the competent body of the international organization responsible for resolving trade disputes.
4. The contracting parties agree that the recommendations of such a committee, while not binding in character, will become the basis for renewed consideration by the contracting parties concerned of the matter out of which the disagreement arose.
5. The contracting parties concerned shall share the expenses of the experts.

6. The provisions of this Article shall be complementary to and not in derogation of the dispute settlement procedures provided for in other international agreements dealing with trade matters.

ARTICLE XIV

Substitution of prior agreements

This Convention shall terminate and replace, between contracting parties, the International Convention respecting measures to be taken against the *Phylloxera vastatrix* of 3 November 1881, the additional Convention signed at Berne on 15 April 1889 and the International Convention for the Protection of Plants signed at Rome on 16 April 1929.

ARTICLE XV

Territorial application

1. Any contracting party may at the time of ratification or adherence or at any time thereafter communicate to the Director-General of FAO a declaration that this Convention shall extend to all or any of the territories for the international relations of which it is responsible, and this Convention shall be applicable to all territories specified in the declaration as from the thirtieth day after the receipt of the declaration by the Director-General.

2. Any contracting party which has communicated to the Director-General of FAO a declaration in accordance with paragraph 1 of this Article may at any time communicate a further declaration modifying the scope of any former declaration or terminating the application of the provisions of the present Convention in respect of any territory. Such modification or termination shall take effect as from the thirtieth day after the receipt of the declaration by the Director-General.

3. The Director-General of FAO shall inform all contracting parties of any declaration received under this Article.

ARTICLE XVI

Supplementary agreements

1. The contracting parties may, for the purpose of meeting special problems of plant protection which need particular attention or action, enter into supplementary agreements. Such agreements may be applicable to specific regions, to specific pests, to specific plants and plant products, to specific methods of international transportation of plants and plant products, or otherwise supplement the provisions of this Convention.

2. Any such supplementary agreements shall come into force for each contracting party concerned after acceptance in accordance with the provisions of the supplementary agreements concerned.

3. Supplementary agreements shall promote the intent of this Convention and shall conform to the principles and provisions of this Convention, as well as to the principles of transparency, non-discrimination and the avoidance of disguised restrictions, particularly on international trade.

ARTICLE XVII

Ratification and adherence

1. This Convention shall be open for signature by all states until 1 May 1952 and shall be ratified at the earliest possible date. The instruments of ratification shall be deposited with the Director-General of FAO, who shall give notice of the date of deposit to each of the signatory states.

2. As soon as this Convention has come into force in accordance with Article XXII it shall be open for adherence by non-signatory states and member organizations of FAO. Adherence shall be

effected by the deposit of an instrument of adherence with the Director-General of FAO, who shall notify all contracting parties.

3. When a member organization of FAO becomes a contracting party to this Convention, the member organization shall, in accordance with the provisions of Article II paragraph 7 of the FAO Constitution, as appropriate, notify at the time of its adherence such modifications or clarifications to its declaration of competence submitted under Article II paragraph 5 of the FAO Constitution as may be necessary in light of its acceptance of this Convention. Any contracting party to this Convention may, at any time, request a member organization of FAO that is a contracting party to this Convention to provide information as to which, as between the member organization and its member states, is responsible for the implementation of any particular matter covered by this Convention. The member organization shall provide this information within a reasonable time.

ARTICLE XVIII

Non-contracting parties

The contracting parties shall encourage any state or member organization of FAO, not a party to this Convention, to accept this Convention, and shall encourage any non-contracting party to apply phytosanitary measures consistent with the provisions of this Convention and any international standards adopted hereunder.

ARTICLE XIX

Languages

1. The authentic languages of this Convention shall be all official languages of FAO.
2. Nothing in this Convention shall be construed as requiring contracting parties to provide and to publish documents or to provide copies of them other than in the language(s) of the contracting party, except as stated in paragraph 3 below.
3. The following documents shall be in at least one of the official languages of FAO:
 - (a) information provided according to Article IV paragraph 4;
 - (b) cover notes giving bibliographical data on documents transmitted according to Article VII paragraph 2(b);
 - (c) information provided according to Article VII paragraph 2(b), (d), (i) and (j);
 - (d) notes giving bibliographical data and a short summary of relevant documents on information provided according to Article VIII paragraph 1(a);
 - (e) requests for information from contact points as well as replies to such requests, but not including any attached documents;
 - (f) any document made available by contracting parties for meetings of the Commission.

ARTICLE XX

Technical assistance

The contracting parties agree to promote the provision of technical assistance to contracting parties, especially those that are developing contracting parties, either bilaterally or through the appropriate international organizations, with the objective of facilitating the implementation of this Convention.

ARTICLE XXI

Amendment

1. Any proposal by a contracting party for the amendment of this Convention shall be communicated to the Director-General of FAO.

2. Any proposed amendment of this Convention received by the Director-General of FAO from a contracting party shall be presented to a regular or special session of the Commission for approval and, if the amendment involves important technical changes or imposes additional obligations on the contracting parties, it shall be considered by an advisory committee of specialists convened by FAO prior to the Commission.
3. Notice of any proposed amendment of this Convention, other than amendments to the Annex, shall be transmitted to the contracting parties by the Director-General of FAO not later than the time when the agenda of the session of the Commission at which the matter is to be considered is dispatched.
4. Any such proposed amendment of this Convention shall require the approval of the Commission and shall come into force as from the thirtieth day after acceptance by two-thirds of the contracting parties. For the purpose of this Article, an instrument deposited by a member organization of FAO shall not be counted as additional to those deposited by member states of such an organization.
5. Amendments involving new obligations for contracting parties, however, shall come into force in respect of each contracting party only on acceptance by it and as from the thirtieth day after such acceptance. The instruments of acceptance of amendments involving new obligations shall be deposited with the Director-General of FAO, who shall inform all contracting parties of the receipt of acceptance and the entry into force of amendments.
6. Proposals for amendments to the model phytosanitary certificates set out in the Annex to this Convention shall be sent to the Secretary and shall be considered for approval by the Commission. Approved amendments to the model phytosanitary certificates set out in the Annex to this Convention shall become effective ninety days after their notification to the contracting parties by the Secretary.
7. For a period of not more than twelve months from an amendment to the model phytosanitary certificates set out in the Annex to this Convention becoming effective, the previous version of the phytosanitary certificates shall also be legally valid for the purpose of this Convention.

ARTICLE XXII

Entry into force

As soon as this Convention has been ratified by three signatory states it shall come into force among them. It shall come into force for each state or member organization of FAO ratifying or adhering thereafter from the date of deposit of its instrument of ratification or adherence.

ARTICLE XXIII

Denunciation

1. Any contracting party may at any time give notice of denunciation of this Convention by notification addressed to the Director-General of FAO. The Director-General shall at once inform all contracting parties.
2. Denunciation shall take effect one year from the date of receipt of the notification by the Director-General of FAO.

ANNEX

Model Phytosanitary Certificate

No. _____

Plant Protection Organization of _____

TO: Plant Protection Organization(s) of _____

I. Description of Consignment

Name and address of exporter: _____

Declared name and address of consignee: _____

Number and description of packages: _____

Distinguishing marks: _____

Place of origin: _____

Declared means of conveyance: _____

Declared point of entry: _____

Name of produce and quantity declared: _____

Botanical name of plants: _____

This is to certify that the plants, plant products or other regulated articles described herein have been inspected and/or tested according to appropriate official procedures and are considered to be free from the quarantine pests specified by the importing contracting party and to conform with the current phytosanitary requirements of the importing contracting party, including those for regulated non-quarantine pests.

They are deemed to be practically free from other pests.*

II. Additional Declaration

[Enter text here]

III. Disinfestation and/or Disinfection Treatment

Date _____ Treatment _____ Chemical (active ingredient) _____

Duration and temperature _____

Concentration _____

Additional information _____

(Stamp of Organization) _____ Place of issue _____
Name of authorized officer _____

Date _____

(Signature)

No financial liability with respect to this certificate shall attach to _____ (name of Plant Protection Organization) or to any of its officers or representatives.*

* Optional clause

Model Phytosanitary Certificate for Re-Export

No. _____

Plant Protection Organization of _____ (contracting party of re-export)

TO: Plant Protection Organization(s) of _____ (contracting party(ies) of import)

I. Description of Consignment

Name and address of exporter: _____

Declared name and address of consignee: _____

Number and description of packages: _____

Distinguishing marks: _____

Place of origin: _____

Declared means of conveyance: _____

Declared point of entry: _____

Name of produce and quantity declared: _____

Botanical name of plants: _____

This is to certify that the plants, plant products or other regulated articles described above _____ were imported into (contracting party of re-export) _____ from _____ (contracting party of origin) covered by Phytosanitary Certificate No. _____, *original certified true copy of which is attached to this certificate; that they are packed repacked in original *new containers, that based on the original phytosanitary certificate and additional inspection , they are considered to conform with the current phytosanitary requirements of the importing contracting party, and that during storage in _____ (contracting party of re-export), the consignment has not been subjected to the risk of infestation or infection.

* Insert tick in appropriate boxes

II. Additional Declaration

III. Disinfestation and/or Disinfection Treatment

Date _____ Treatment _____ Chemical (active ingredient) _____

Duration and temperature _____

Concentration _____

Additional information _____

Place of issue _____

(Stamp of Organization) Name of authorized officer _____

Date _____

(Signature)

No financial liability with respect to this certificate shall attach to _____ (name of Plant Protection Organization) or to any of its officers or representatives.*

* Optional clause

Publication history

2015-2016 version:

- Minor change to “Statement of commitment”.
- Added note where to find TPDP Instructions to authors.
- Reference to standard wording for responding to comments.
- Included modified CPM rules of procedure to reflect the correct numbering of the annexes (SSP is now Annex 3).
- Revoking mechanism moved from 4.7.
- Under “Hierarchy of terms of standards” removed the irradiation example as this topic was removed.
- Changed diagram on stage 4 for DPs to read “notification period”.
- Added underline and footnote in rule 6 of the SC to state FAO legal’s advice.
- Added link to the Adopted ISPMs list in Annex 1.
- Deleted “glossary term” in the submission form for topics.
- Added note under TPDP that instruction to authors are published publicly on the TPDP page of the IPP.
- Added note on interpretation requests for the SC.
- Updated TPPT working criteria added.

2016-2017 version:

- Included CPM-11 (2015) adopted Standard setting procedure and updated the Procedure manual throughout accordingly (e.g. deleted section on “editorial team”, modified “availability of standard setting documents”, included additional paragraph in the SC rules of procedure, updated all figures relevant to the process, and edited all sections to ensure consistency in terminology with the new procedure. In this context, a number of paragraphs were moved for better flow, and black vs blue text was checked and corrected where necessary.
- Deleted Annex 9 as pertaining to “formal objections”.
- Updated section on IPPC regional workshops
- Included note on process for ink amendments in languages other than English
- Major reorganization and update of the TPPT section.
- Updated submission form for topics with consistent and correct wording.

Publication history last updated: 2016-09

IPPC

The International Plant Protection Convention (IPPC) is an international plant health agreement that aims to protect cultivated and wild plants by preventing the introduction and spread of pests. International travel and trade are greater than ever before. As people and commodities move around the world, organisms that present risks to plants travel with them.

Organization

- ◆ There are over 180 contracting parties to the IPPC.
- ◆ Each contracting party has a national plant protection organization (NPPO) and an Official IPPC contact point.
- ◆ Nine regional plant protection organizations (RPPOs) work to facilitate the implementation of the IPPC in countries.
- ◆ IPPC liaises with relevant international organizations to help build regional and national capacities.
- ◆ The Secretariat is provided by the Food and Agriculture Organization of the United Nations (FAO).



International Plant Protection Convention (IPPC)

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